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ABSTRACT

This report presents the results of one of the first empirical investigations of how a tax subsidy for tuition costs actually influences parents' school choices. It provides data about subsidy costs, utilization, and effects in Minnesota, the first state to have a tuition subsidy pass judicial review at all levels of the court system. The study also examines the effects of other state aid policies on nonpublic school operations and on parent choice of school, and it investigates the process by which parents make schooling choices. Findings suggest that the tax deduction has little or no effect on parental choice, while disproportionately benefiting upper-income households and parents who would have made the same schooling choices in the absence of the deduction. A reimbursable tax credit would be accessible to more parents than a tax deduction, while an educational voucher, representing "up front" cash, would have even greater effects on parents' school choices. However, other policies that directly increase access to schooling alternatives, such as lower immediate costs and free bus transportation, have the most effect on the schooling choices of low and moderate income parents. An appendix presents the selection and disposition of survey samples. Two pages of references and numerous tables are included. (IW)

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Linda Darling-Hammond, Sheila Nataraj Kirby
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A Case Study of Minnesota

Linda Darling-Hammond, Sheila Nataraj Kirby
With Priscilla M. Schlegel

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PREFACE

Public support of nonpublic elementary and secondary education has become one of the most controversial issues in American educational policy, with tuition tax credits and deductions the subject of ongoing debate at both the state and federal level. This report presents the results of one of the first empirical investigations of how a tax subsidy for tuition costs actually influences parents' school choices. It provides data about subsidy costs, utilization, and effects in Minnesota, the first state to have a tuition subsidy pass judicial review at all levels of the court system.

The study also examines the effects of other state aid policies on nonpublic school operations and on parent choice of school, and it investigates the process by which parents make schooling choices. The study was undertaken to analyze the operation of a tuition tax subsidy within the broader policy context that shapes school choice decisions. The report should be useful to policymakers, researchers, and practitioners who are concerned with tax subsidies for educational expenses and with the questions of how parents make schooling decisions on behalf of their children.

This research was supported by a contract with the National Institute of Education, U.S. Department of Education.

SUMMARY

ISSUES

Advocates and opponents of public funding for private schools have argued about the fairness of various approaches to encouraging "choice." They have also debated the potential long-range consequences of public funding for the independence of private schools and the institutional viability of public schools. At the center of current legislative debates are proposals for tuition tax credits or deductions to provide reimbursement for private school expenses incurred by parents. Proponents argue that subsidies to parents for private school costs will enhance educational equity by providing options now available primarily to the rich to poor and middle-income parents as well; they further argue that such subsidies will improve school quality by encouraging competition among schools. Opponents counter that poorer parents will be constrained in using the subsidies, while more affluent parents will be encouraged to withdraw their children from the public schools, leaving the public school system with more tenuous public support and a more racially and socioeconomically stratified population.

These arguments have been conducted on largely theoretical grounds because the effects of direct subsidies to parents for private school costs have not, until recently, been studied. Although such subsidies have been enacted in several states, all but one have been overturned by the courts before their effects could be assessed. Thus, data have not been available to answer two questions central to the debate: (1) What influence does the presence of a tuition tax subsidy have on school choice? and (2) What parents will be able to use subsidies for private education?

APPROACH

This report examines the effects of a state tax deduction for educational expenses upon parents' school choices in the state of Minnesota. Minnesota's tax deduction (upheld by the U.S. Supreme Court in 1983) was the first state policy subsidizing private school tuition costs to pass judicial review through all levels of the court system. Families in Minnesota are allowed to deduct educational expenses of up to $650 per elementary school child and $1,000 per secondary school child from

their income when figuring their state income tax liability. The subsidy is available to parents of both public and private school children, a critical element of its constitutionality.

Minnesota also provides a number of other forms of public aid to private education, including free transportation to nonpublic schools, direct aid to private schools for books and for health and counseling services, and various other educational services provided through shared-time arrangements in the public schools. These programs, like the tax subsidy, result in lowering the price parents would otherwise have to pay for a given quantity or quality of private school services. Thus, Minnesota serves as a unique case study of how parents make school choices in an environment where private school choice is actively encouraged.

The analysis described in this report was based on two telephone surveys: a set of interviews with 98 nonpublic school administrators, and a second set of interviews with 476 parents of Minnesota public and private school children. The surveys were conducted in seven counties that are demographically representative of the state as a whole. The interviews were designed to solicit information about nonpublic school operations in the context of Minnesota's state aid policies and about the factors influencing parent school choices.

RESULTS

Nonpublic Schooling and State Subsidies in Minnesota

About 10.5 percent of Minnesota's school-age children attended nonpublic schools in 1982–83, a proportion slightly lower than the national average. About 95 percent of those children were in religious schools, mostly Catholic and Lutheran. Since 1975, the state's nonpublic school enrollments have climbed steadily after many years of decline, mirroring national trends. The earlier decline occurred while both the tuition tax deduction and a short-lived tuition tax credit were in effect. The other nonpublic school subsidies were introduced after 1975, when enrollments began to increase.

The costs of Minnesota's nonpublic school subsidies—not including the tax deduction—totaled nearly $14 million in 1982–83, about $150 per nonpublic school student. The largest subsidies are for transportation and the nonpublic school aids program. The costs of the tax deduction grew from about $2.5 million in 1978 to $6.1 million in 1983, apparently reflecting higher utilization rates, rather than increased claim size. Use of the deduction increased 150 percent between 1978 and 1980, while average claim size dropped. However, even in 1980, only 16 percent of eligible households claimed the deduction.

Nonpublic school administrators viewed the income tax deduction as unimportant to their school operations or to parent choice. Although most administrators routinely inform parents about the availability of the deduction, nearly all of them believe it has little or no effect on school enrollments or tuition costs. (This finding was confirmed in our parent survey, described below.)

On the other hand, the administrators viewed Minnesota's transportation aid program as very important to parents' school choices. Nearly half of the administrators thought that at least 20 percent of their students would be unable to attend their school without this assistance. The administrators believe that other state aid policies providing direct services to students also help to increase private school enrollments by expanding services and lowering costs. Most administrators, particularly those in low-tuition sectarian schools, said they would have to increase tuitions if the support programs were not available.

Why Parents Choose the Schools They Do

What kinds of parents make active school choices? Previous studies of parental choice have found that large proportions of public school parents do not make such choices; they simply send their child to the nearest public school for convenience. Private school parents, it has been assumed, make more active choices about what type of education they want their children to receive. In the Minnesota sample, however, public school parents were actually more likely to be "active choosers" than private school parents. Although slightly less likely than private school parents to consider other schools at the time of current school choice, most public school parents had considered public school quality as an important factor in determining residential location. Only 38 percent of public school parents were "nonchoosers" (i.e., made neither of these choices), as compared with 47 percent of private school parents.

Higher incomes and education definitely increased the likelihood that parents had considered public school quality in their residential choice, but these factors had a much less clear-cut relationship to whether parents considered more than one school at the time of enrollment. Lower-income households were more likely to seek out school alternatives at the time of enrollment, perhaps because they face less desirable public schools in their neighborhoods. More affluent parents apparently move to neighborhoods they consider more desirable. Those least likely to exhibit either type of choice-making behavior were residents of rural areas and parents who had themselves attended only private schools.

Choice of Current School. The foremost reasons cited by public school parents for their choices were school quality factors (29 percent), situational circumstances (21 percent), and financial factors (19 percent). Private school parents most often cited school quality factors (38 percent) and moral and religious instruction (27 percent); financial factors played a modest role in their school choice decisions. Of the public school parents who had considered private schools, 14 percent cited costs as a reason for not choosing private schooling. Of those parents who had transferred children from private to public schools, only 17 percent cited costs as the reason for the switch.

Our statistical analysis of the survey results showed that the most important predictors of choice were private school price faced by the household[1] and family income above $25,000. Other elements of price and taste also influence choice. For instance, households that considered public school quality in choosing their place of residence had a lower propensity for choosing private schools, having presumably selected (and paid for) the community that best fit their needs. Those who consider location important in school choice were also less likely to choose private schools, while households valuing religious instruction were more likely to choose private schools.

Knowledge and use of the income tax deduction in our sample were related both to family income and to private school choice. Knowledge of the deduction was also related to parents' education levels. Sixty-three percent of the sample had heard of the deduction, but only 28 percent of the sample had ever used it: 61 percent of private school parents, versus 15 percent of public school parents. Knowledge and use of the deduction were greatest for upper-income parents with children in high-tuition schools, and lowest for low-income and minority households. Those who knew of the deduction and did not use it most frequently said they thought it did not apply to public school children.

For those private school parents who had ever claimed the deduction, only 10 percent said the deduction was very important in their choice of their child's current school. Fully 98 percent of these parents said they would still have sent their children to private school if the deduction had not been available. By contrast, 40 percent of those who received free bus transportation to private schools said the availability of this service was a very important factor in their choice. Twenty-two percent of the transportation users said they could not have sent their child to that school if the service were not available. Furthermore, transportation users were much more likely to be low-income parents

[1]The price variable was based on actual tuition paid by private school households and a proxy derived from relevant household characteristics for public school households.

of children in lower-tuition schools. We found in modeling parent choice that these types of parents were much more likely to be on the "choice margin," making active school choices in response to price factors.

Switching. To identify those parents at the choice margin, we asked parents of public school children whether they would switch their children to private schools at different levels of a tax deduction. At the then-current levels, 23 percent reported they would be likely to transfer. At levels about 70 percent higher, 30 percent reported they would be likely to transfer. More than 50 percent said they would be *very* unlikely to transfer in either case. Obviously, parents who said they would transfer at deduction levels already in effect must have little knowledge of the deduction, since they had not done so. While reports of possible future behavior based on a policy whose benefits may be poorly understood by respondents must obviously be viewed with some skepticism, these answers suggest which types of respondents had a desire to switch to private schools.

Our statistical analysis of the survey results showed that price and income have little effect on parents' propensity to say they would switch schools. The parents most likely to say they would switch if the deduction were higher were (1) those who were dissatisfied with their current school, (2) those who considered school location important, and (3) those who least understood the deduction. Respondents who understood the ramifications of a tax deduction were much less likely to say they would transfer, even if offered higher deductions. This suggests that our findings about the unimportance of the deduction to current school choice would also hold at higher levels of the deduction. Many parents who might want to change schools would find the deduction of little value in actualizing their desire to switch.

The implementation of tuition tax subsidies or other nonpublic school aids may lower parents' costs of sending their children to a nonpublic school. Alternatively, schools may raise tuition levels in response to new or increased tax subsidies. Our nonpublic school survey also suggests that schools might raise tuitions in the absence of state aid programs. Any of these changes would be likely to affect private school parents at the choice margin.

We asked private school parents about the likelihood of transferring to another school if annual tuition costs were raised by specific amounts ($200, $500, and $1,000). The probability of switching was very dependent on the size of the hypothetical tuition increase. At low levels of increase, only about 13 percent appeared to consider switching. This went up to almost 60 percent at the highest level of increase. However, roughly half of those who said they would switch schools

would choose other private school alternatives, not public schools. Parents most likely to say they would switch to public school at a $500 increase in tuition were those with children in lower-tuition schools—primarily Catholics and lower-income families, who are obviously most vulnerable to changes in price.

CONCLUSIONS

Our findings suggest that Minnesota's nonpublic school policies do remove some of the obstacles to private school choice, by lowering costs and increasing access for those who might not otherwise be able to choose private schools. However, the tax deduction, by itself, appears to have little or no effect on parental choice, while disproportionately benefiting parents with higher incomes and educational levels. Other policies, like free bus transportation, appear to have greater effects on parental choice, particularly for parents at the choice margin. Our survey of nonpublic schools suggests that state aid to nonpublic schools may also increase access by lowering tuition costs.

We do not expect that the recent increase in the size of the deduction will influence more parents to transfer their children to private schools. Although 30 percent of the public school parents in our sample said they would be at least somewhat likely to transfer to private schools at the new deduction levels, it seems that most of them do not understand how the deduction operates in terms of eligibility and actual monetary value. More than three-quarters of these parents (about 23 percent of all public school parents) said they would transfer at the *then-current* levels of the deduction. Obviously, since they had not already transferred, they were either unaware of the deduction or ill-informed about how it operates. Those who knew the most about the deduction were least likely to say they would transfer. Thus, we might expect that the increase in the deduction will cost the state more in forgone revenues as parents paying high tuitions can write off more of their expenses, but it will not significantly change the size or composition of the private school sector.

The relative unimportance of the tax deduction is not surprising, for at least two reasons. First, the actual value of the deduction is much smaller than its face value, since it is a deduction rather than a credit. Parents must assume direct, immediate costs for private schooling before they can recoup what small portion is provided (at most about 15 percent) by the deduction. Indeed, for low-income parents, the deduction has virtually no effect on private school costs, since most of these parents do not itemize deductions or pay much tax. Second, the

factors bearing most strongly on school choice—parents' own schooling, concern for religious instruction, and logistical considerations—are not directly related to cost.

It is important to note that the costs and effects of a tax deduction for educational expenses are likely to differ significantly from those of a tax credit or a voucher. A reimbursable tax credit would be accessible to more parents than a tax deduction, since parents would not have to itemize to be eligible for it. Thus, a tax credit could be expected to have higher utilization rates and greater costs than a deduction of the same nominal value. However, parents would still have to incur the immediate costs of private schooling before they could benefit from a tax credit. Unless the tax credit were substantial, it is unlikely that many parents would make school decisions primarily on this basis.

An educational voucher might have greater effects on parents' schooling choices, since it would represent "up front" cash to be applied against parents' costs. Also, parents would not have to pay taxes to be eligible for a voucher. In this sense, a voucher theoretically offers the widest access to choice (and the greatest potential costs). However, the size of the vouchers and the administrative mechanisms used to allocate them would influence both their use and distributional effects.

Thus, a tax deduction is perhaps the most regressive and inefficient form of subsidy for parents' educational expenses if the goal is to expand choice-making ability. While increasingly costly, the deduction benefits primarily upper-income households and parents who would have made the same schooling choices in the absence of the deduction. For low- and moderate-income parents on the choice margin, policies that directly increase access to schooling alternatives—through lower immediate costs and more available transportation—are more likely to affect schooling choices than an indirect tax subsidy.

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I. INTRODUCTION

Public support of nonpublic elementary and secondary education has become one of the most controversial issues in American educational policy. Legislative efforts to provide tax dollars for educational services in nonpublic schools have been debated for decades in the policymaking arena and in the courts. In recent years discussion of nonpublic school aid has increasingly focused on financial support to parents through direct vouchers or tax subsidies for educational expenses, i.e., tax credits or deductions from taxable income, up to some maximum amount, as partial reimbursement for tuition expenses incurred by parents who send their children to nonpublic schools.

This study contributes to the tuition tax credit debate by providing empirical evidence about the utilization and effects of Minnesota's tax deduction for educational expenses as it operates in the context of other state aid policies. Minnesota offers a unique case study, having had in operation since 1955 the only state tax deduction for public and private school expenses that has passed judicial review at all levels of the court system. Other states' efforts to enact tuition tax credits or deductions have been stricken down by the courts, but the U.S. Supreme Court declared Minnesota's statute constitutional in 1983.

The arguments for and against public support of nonpublic education are marshaled succinctly by James and Levin (1983) in the introduction to their recent book, *Public Dollars for Private Schools.* Advocates contend that tuition tax credits or vouchers will allow freer choice in the schooling of children by extending to the poor and the middle class an alternative that is currently available only to higher-income households that are able to pay private tuition costs. In addition, these advocates claim that public schools, secure in their monopoly position, have become inefficient and ineffective, and that more competition from nonpublic schools, which are regarded by some as producing higher levels of educational attainment, would force public schools to become more efficient. Finally, tuition tax credits or another form of subsidy would help alleviate some of the double burden borne by parents whose children attend private schools, who pay for public schools through taxes and also pay private school tuition fees.

Opponents of such policies, on the other hand, argue that public support for religiously affiliated private schools violates the constitutional separation of church and state. They further contend that such proposals would erode the already tenuous support for public school

spending, particularly for special programs such as education for the handicapped, bilingual education, and compensatory education. It is also argued that subsidies for private education would lead to further racial and socioeconomic stratification of schools, leaving public schools with the nearly impossible task of providing high-quality education to the most challenging students with even less financial support than is currently available. Perhaps even more serious is the argument that tuition tax credits or vouchers "would undermine the public interest in providing a common educational experience for all students, a shared introduction to the practice of democratic values" (James and Levin, 1983, p. 5).

It is important to note at the outset the differences between tuition tax deductions and tax credits, and between either of these and vouchers for educational expenses. Both tuition tax deductions and credits would indirectly lower parents' schooling costs by decreasing their tax liability in some proportion to their expenditures for education. However, a tax *credit* directly reduces the amount of taxes paid by the amount of the credit earned, while a tax *deduction* reduces taxes only indirectly by lowering the amount of taxable income against which a tax rate is applied. Thus a tax credit and a tax deduction of the same face value yield different tax savings: the deduction is worth only a fraction of the amount recaptured by the credit.

Tax deductions and credits are valuable only to those who owe taxes, and their value occurs only after the expenditures have already been made. Educational vouchers, on the other hand, represent "cash in hand" to be applied to school costs, and they may be useful to all eligible individuals, whether they pay taxes or not. These different policy instruments should therefore produce very different outcomes in terms of their beneficiaries and their effects on parents' schooling choices.

The arguments about all of these instruments, however, focus not on the merits or demerits of tax subsidies or vouchers *per se*, but on the role the institution of such policies would play in the whole dynamic of relationships among private schools, the government, and public schools. In fact, proponents and opponents alike tend to view any such policy as the first of a series of political actions that would lead eventually either to a more competitive, and therefore, more vibrant educational system or to a dual situation, with a well-funded system serving privileged students on the one hand, and an "educational ghetto" on the other.

Analysis of tax credit, deduction, or voucher policies, therefore, cannot focus solely on the specifics of the policies or their short-run effects, although both of these are of obvious analytical interest.

Instead, policy analysis must deal with the roles a tax credit might play in a series of related private school policies affecting both the institutional vitality of public and nonpublic schools and the degree of parental choice offered in the total educational system.

Minnesota's income tax deduction for dependent educational expenses and its earlier short-lived tuition tax credit are elements of a unique overall experience of government/private school/public school relations. Indeed, the income tax deduction is only one of a number of subsidies that are intended to increase the accessibility and quality of nonpublic school education to Minnesota families. For example, transportation is provided on an equal basis to public and nonpublic school students within school district boundaries; certain state-funded categorical programs, like special education and services to limited-English-speaking children, are equally available to students in public and nonpublic schools; and a specific categorical program for nonpublic school aid provides textbooks, instructional materials and equipment, standardized tests, health services, and guidance and counseling services to requesting nonpublic school students.

Several of the questions that have been raised in the debate about tuition tax credits and other subsidies for nonpublic education are potentially subject to empirical tests:

- *Who are the beneficiaries of a particular subsidy?* Who is eligible for compensation? What types of parents know about and are able to use the subsidy to offset their educational expenditures?
- *What are the costs of such subsidies?* What are the forgone revenues that a state can expect to "pay" as a function of the size of the subsidy, the number of parents who use it, and the size of their claims?
- *What effects does a subsidy have on the costs and operations of nonpublic schools?* Does the aid increase the price that nonpublic schools charge, increase their enrollments, or broaden the range of educational services offered?
- *How does a subsidy affect parents' choice of schools for their children?* Does the aid influence parents to send their children to schools other than those they might have "chosen" in the absence of the subsidy?
- *How does a particular subsidy affect the mix of students in public and nonpublic schools?* Does the aid increase or decrease heterogeneity in the student composition of different types of schools?
- *Do nonpublic school subsidies, in combination with parents' school choices, influence public support for public school funding?*

> Does state support of the private school sector, or of parents' private sector choices, have any effect on parents' willingness to pay taxes for public school expenses?

These questions are examined in this study for the case of Minnesota's nonpublic school subsidies. We also explore the implications of these findings for other states and for other forms of aid to nonpublic schools and students.

The analysis is based on two surveys fielded during the spring and summer of 1984: (1) a survey of 476 parents of public and private school children residing in a seven-county region surrounding and including the Minneapolis-St. Paul Standard Metropolitan Statistical Area (SMSA), and (2) a survey of 98 nonpublic schools within the same region. While we cannot generalize results from our study of Minnesota's unique school policies to other states in their contemporary policy contexts, the study does enable us to explore some *potential* outcomes of similar policies aimed at supporting or encouraging private education in other states or at the federal level. It certainly provides the first look at the *experiential* effect of a tax subsidy on parents and nonpublic school enrollments. In particular, the study allows us to examine the distributional effects of the tax subsidy among its intended beneficiaries.

Section II of this report examines the history, provisions, operation, and context of Minnesota's nonpublic school aid policies. Section III assesses the impact of Minnesota's nonpublic school aid policies on both parental choice and the operation of nonpublic schools. Section IV presents a theoretical framework for analyzing parents' school choices and develops models of schooling choice which incorporate knowledge of the tax deduction along with the effects of hypothetical increases in the amount of the deduction and increased tuition costs. Section V presents our conclusions.

II. HISTORY AND CONTEXT OF MINNESOTA'S NONPUBLIC SCHOOL POLICIES

Minnesota's income tax deduction for educational expenses was enacted in 1955 as an amendment to a larger Omnibus Education bill. The tax deduction provision allowed public and private school parents to deduct up to $200 in tuition and other school expenses from their gross income for state income tax computations. In 1976, the maximum deduction was raised to $500 per child for elementary school expenses and $700 per child for secondary school expenses. In 1984, the deduction ceilings were raised to $650 and $1000 for elementary and secondary school students, respectively.

Although the income tax deduction has not been a source of great controversy in Minnesota for most of the past 30 years, it has become a subject of great interest nationally. When the U.S. Supreme Court declared it constitutional in 1983,[1] the Minnesota statute became the first tax subsidy for tuition costs to pass judicial muster at all levels of the court system. A tuition tax credit statute in effect in Minnesota from 1971 to 1973 had gone the way of many other state tuition tax subsidies when it was declared unconstitutional by the Minnesota Supreme Court in 1974.

This section examines the tuition tax deduction in the context of nonpublic schools and state aid for education in Minnesota. We then examine the effects of the tax deduction policy on public and private school revenues and enrollments in Minnesota, taking into account the unique political, demographic, and economic conditions that set the parameters for the policy's genesis and effects.

SCHOOL FUNDING IN MINNESOTA

Minnesota has long been known as an "education-minded" state, with a high level of educational attainment among its population and a substantial proportion of its resources devoted to education. In 1978, Minnesota ranked fourth among the states in the proportion of personal income devoted to state and local funding for public schools; it ranked fifth in per capita state government expenditures for all educa-

[1]Mueller v. Allen, 103 S.Ct. 3062 (1983).

tion.[2] Elected public officials in Minnesota are also deeply concerned with and highly aware of educational issues. More than one-fourth of the state legislators are former or current educators, and education policy issues comprise a substantial segment of the legislative agenda.

Early in the 1970s, when school finance reform issues emerged in many states, the Minnesota legislature enacted equalizing legislation which increased state aid to local school districts while compensating for differences in local property tax bases. The reforms of 1971 and 1973, enacted without the stimulus of a school finance lawsuit, became widely known as the "Minnesota Miracle" because of their dramatic restructuring of state and local responsibilities for education funding and their commitment to equity in the provision of educational resources.

Minnesota currently spends more than $1 billion annually for state aid to education. State appropriations provide about 66 percent of the state/local operating costs of public elementary and secondary education.[3] In addition, Minnesota provides significant support for early childhood and adult education and also funds a number of programs that support services to students in nonpublic schools.

Traditionally, the loyalties of Minnesota legislators who are supporters of education programs have not been sharply divided between public and nonpublic school support, lower and higher education, or basic aid and special categorical aids to schools. Support for education funding has been bipartisan and has covered a wide range of educational programs and services.

However, as a result of severe revenue shortfalls in the early 1980s, Minnesotans have had to make difficult decisions about the extent and nature of state funding for education. Since 1980, local districts have had to assume a greater share of their operating costs. State/local expenditures for public elementary and secondary education have slipped to 5.2 percent of personal income (from 7.2 percent a decade earlier), lowering Minnesota's ranking to fifteenth among the states on this measure of fiscal effort.[4]

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[2]U.S. Department of Commerce, "Personal Income by States and Regions, 1972–77," *Survey of Current Business*, Vol. 58, No. 15, August 1978; and U.S. Department of Commerce, Bureau of the Census, *State Government Finances in 1977*, Series GF 77, No. 3, Washington, D.C.: U.S. Government Printing Office, September 1978.

[3]Alan R. Hopeman and Marsha Gronseth, *Minnesota School Finance*, Minnesota House of Representatives, December 1983, p. 4.

[4]C. Emily Feistritzer, *The Condition of Teaching: A State by State Analysis*, Princeton: The Carnegie Foundation for the Advancement of Teaching, 1983, p. 54.

In a recent publication, the Minnesota Department of Education highlighted a number of school funding issues that will be increasingly important in the 1980s, including the question of who should be educated at state expense:

> Traditionally, the state has insisted on free public education for public school elementary and secondary students. There [has been] a trend toward expanding the range of programs offered through the public schools and the legislature has been willing to fund these programs. Examples are early childhood education, community education, adult and post-secondary vocational education, *and services to nonpublic school students.* (Emphasis added.)[5]

The Department of Education raised this issue because in the changed economic climate educational programs and services—including those for nonpublic school students—that have been previously funded without question are subject to more scrutiny. As tradeoffs must be made with basic aid appropriations, support for "special" categories of funding is less certain than it was in the past.

In 1983, a number of major new proposals for school finance reform surfaced in Minnesota including several that could affect subsidies for nonpublic schools and students.[6] One summary of these proposals suggests that on the one hand, Republican legislators would protect the tuition tax deduction from changes, while the Citizens League would go further to establish a voucher program for low-income families. On the other hand, the Minnesota Association of School Administrators and the Minnesota Education Association would eliminate state funding for students or services in nonpublic schools.

Despite the emergence of a renewed debate over the desirability of funding nonpublic schools and students, Minnesota appears to have reaffirmed its commitment to such aid and to policies intended to expand parental choice in schooling. In 1984, the maximum deduction levels for dependents' educational expenses were increased by 30 to 40 percent to reflect the increases in nonpublic school costs since 1975, when changes were last made in the deduction allowances. In addition, a voucher proposal for low-income students was introduced in the state legislature and was supported by the bipartisan Citizens' League, suggesting that even as Minnesota's economic and political context has changed, support for nonpublic schooling has not waned.

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[5]Minnesota Department of Education, *The ABCs of Minnesota School Finance: Paying for the Public Schools in 1982–83*, October 1982, p.27.

[6]Thomas R. Peek and Douglas S. Wilson, *Fiscal Constraints on Minnesota: Proposals for Reform*, Minneapolis: Center for Urban and Regional Affairs, 1983.

NONPUBLIC SCHOOL AIDS

The history of aid to nonpublic schools and students in Minnesota is similar to that of many other states that have sought to provide educational assistance to all students, regardless of the schools they attend. In addition to the tax deduction act, which has survived for 30 years, and the short-lived tax credit law, Minnesota also provides other forms of aid to nonpublic schools and students.

The Transportation of School Children Act, passed in 1969, mandated the provision of bus transportation for all children on an equal basis regardless of the school they attend. Thus, if a public school district provides bus transportation for all of its students who live a certain distance from school, it must provide similar service to students who attend nonpublic schools within that same distance from their homes.

In 1976, a Nonpublic School Aid bill was passed which allows loans of nonreligious books, materials, and equipment to nonpublic schools and their students. It also provides the services of public school counselors, psychologists, speech teachers, remedial instructors, and other "auxiliary service" providers to nonpublic school students (Peek et al., 1985).

Other special services, such as compensatory education, special education, and services to limited-English-speaking children, are made equally available to students in public and nonpublic schools. In addition, nonpublic school students may take other courses in the public schools on a "shared-time" basis.

All of these services are made available under the "child benefit" theory found acceptable by the courts as a means of aiding nonpublic school students. That is, the aid directly benefits the child, not the schools—or their sectarian aims. However, these services do have implicit economic effects on the nonpublic schools, in that they enable the schools to offer a wider range of services at a given price, or tuition level, than would presumably be possible in the absence of such aid.

Considering the range and history of state aid to nonpublic schools in Minnesota, it is somewhat surprising that state regulation of the nonpublic school sector is minimal. Although all states regulate nonpublic schools far less than public schools, many states have expanded their control over private schools by specifying the curriculum, safety, or resource requirements necessary for accreditation or licensure (Lines, 1983, pp. 214–217). In Minnesota, there is no state licensing procedure for nonpublic schools, and all assistance to the schools and their students is handled through the local public school systems. Local school superintendents are responsible for enforcing the state's

compulsory attendance law by ascertaining where all of the district's resident school-age children are attending school and certifying that the institutions they attend are indeed "schools." Disagreements between parents and the local school system on this question are handled by the courts rather than the state educational agency.

Efforts by the State Department of Education to get a law enacted clarifying what constitutes a "school" have been unsuccessful. The most recent bill, introduced in 1982, died in the legislature because agreement could not be reached over teacher licensure requirements.

Similarly, all reporting and transactions necessary to deliver financial assistance or services to nonpublic schools and their students are handled by local public school districts, which are then reimbursed by the state. The lack of state regulation concerning the operations of nonpublic schools and the unique relationship between local public school districts and nonpublic schools place the burden of financial and service transactions on public schools, while apparently relieving nonpublic schools of nearly all potential regulatory burdens. However, school districts can use a portion (up to 5 percent) of the funds they receive for assisting nonpublic students to cover their administrative costs.

In sum, Minnesota's efforts on behalf of its nonpublic school children are not confined to the tuition tax deduction. In fact, the tax policy constitutes only a small portion of such assistance. Consequently, Minnesota's experience can in no way be regarded as a "controlled experiment" in the use of tuition tax credits or deductions. However, because of its unique combination of extensive financial aid for private schools and minimal state regulation, Minnesota provides an ideal case study of relationships among private schools, the government, and public schools.

NONPUBLIC SCHOOLS IN MINNESOTA

As of the 1982–83 school year, approximately 92,300 Minnesota students—about 10.5 percent of the state's school-age population—attended nonpublic elementary and secondary schools. Although Minnesota's proportion of students attending nonpublic schools is now slightly lower than the national average of 10.8 percent, it represents an increase from the state's lowest level of nonpublic enrollments, 9.1 percent in 1974–75. Following a peak of 18.7 percent in 1959–60, the proportion of Minnesota students attending nonpublic schools dropped steadily for 15 years. It is worth noting that this decline occurred even during the years that the tuition tax credit and the tax deduction were

in effect. The percentage of students in nonpublic schools has steadily increased since then across all grade levels.[7] These trends mirror nonpublic school enrollment trends nationwide.

Nonpublic schools and students are not evenly distributed across the state. As Fig. 2.1 shows, there are 37 counties in which nonpublic school enrollments accounted for less than 5 percent of total enrollments in 1980–81. These counties are predominantly rural. By contrast, in six counties within the Twin Cities area and the more urbanized south central part of the state, more than 18 percent of the total enrollments are in nonpublic schools.

The number of nonpublic schools in Minnesota increased from 487 in 1970 to 553 in 1981. However, over that same period, the median size of nonpublic schools decreased from 191 to 119 students. While the number of large schools has declined, many new, small nonpublic schools have opened. Between 1978 and 1981, 70 new nonpublic schools opened, with a median size of only 30 students.[8]

Nearly 90 percent of the nonpublic schools in Minnesota are religiously affiliated. As Table 2.1 shows, the largest proportion of schools

Table 2.1

NUMBER OF NONPUBLIC SCHOOLS IN MINNESOTA AND ENROLLMENT, BY AFFILIATION, 1980-81

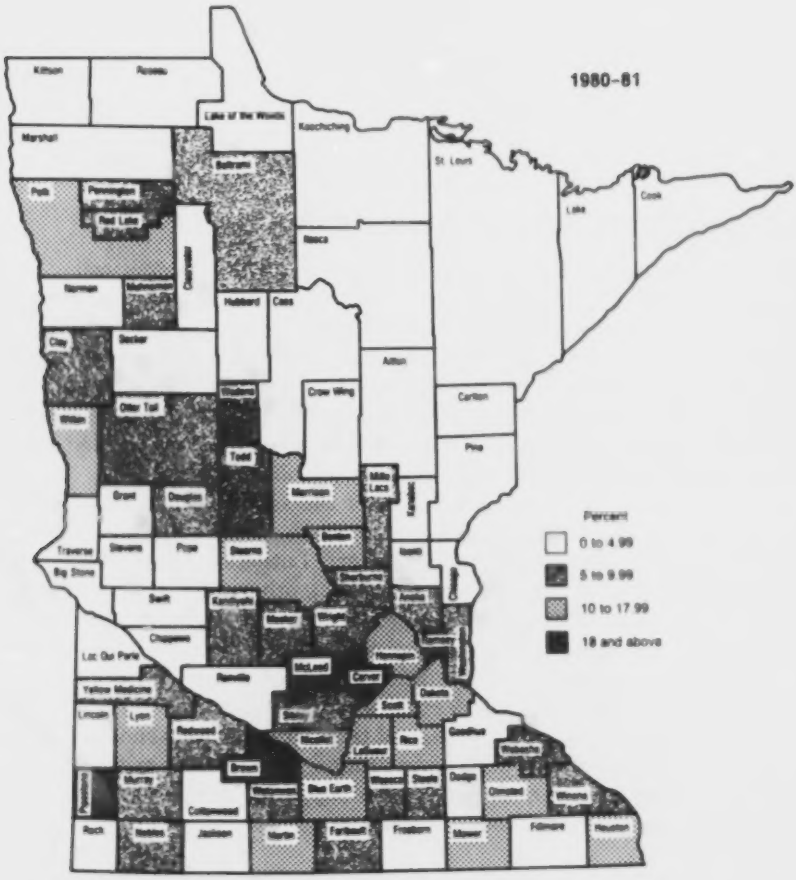
Affiliation	Number of Schools	Total Enrollment
Catholic	252	64,918
Lutheran	118	10,807
Baptist	35	3,715
Seventh Day Adventist	19	619
Reformed	7	913
Amish	4	23*
Assembly of God	3	278
Christian and Missionary Alliance	3	220
Non- or interdenominational	17	1,580
Other religious affiliations	26	3,358
Nonsectarian	61	4,446
Unknown	8	128
Total	553	91,005

SOURCE: Minnesota Department of Education, *Information on Minnesota's Nonpublic Schools for 1980-81*, March 1982.

*Two Amish schools did not submit a report for the 1980-81 school year; therefore, their enrollments are not included here.

[7]Minnesota Department of Education, *Information on Minnesota's Nonpublic Schools for 1980–81*, March 1982, p. 2.

[8]Ibid., p. 6.



SOURCE: Minnesota Department of Education, *Information on Minnesota's Nonpublic Schools for 1980–81*, March 1982.

Fig. 2.1—Percentage of students enrolled in nonpublic schools, by county

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(46 percent) are affiliated with the Catholic Church; the next largest proportion (21 percent), with the Lutheran Church. More than 95 percent of all nonpublic school students in Minnesota attend religiously affiliated schools. As Fig. 2.2 shows, this percentage is among the highest in the country.

CHARACTERISTICS OF THE SURVEY SAMPLE

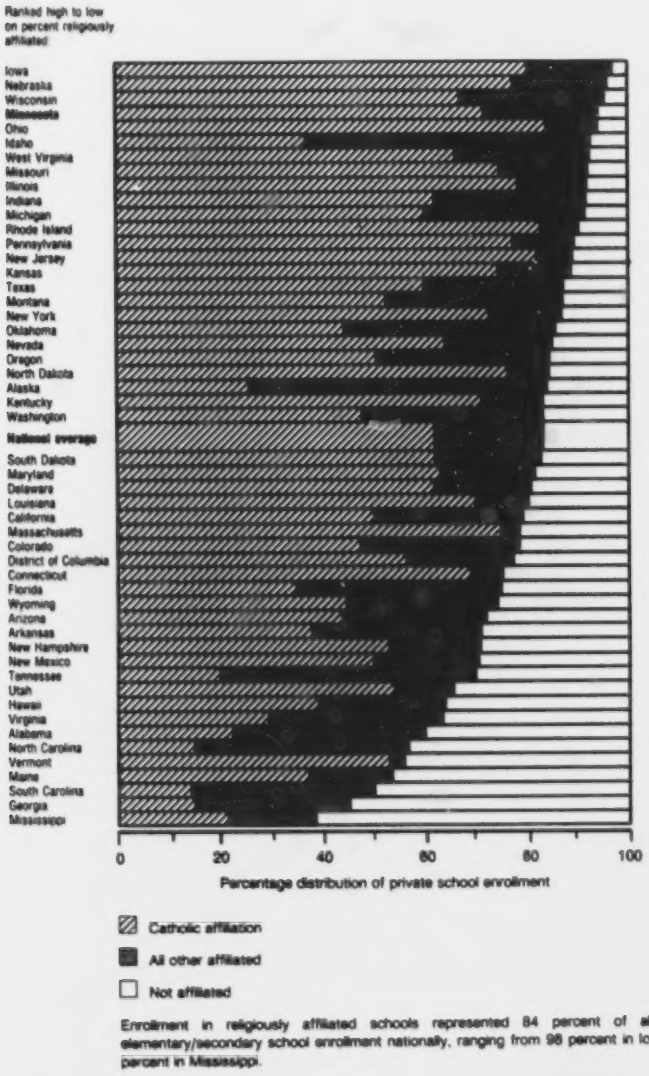
We surveyed 98 schools representing a stratified random sample of nonpublic schools in the seven-county region including and surrounding the Minneapolis-St.Paul SMSA. The sample was stratified by school size to include nearly equal numbers of schools serving up to 100 students, schools with 101–200 students, schools with 201–300 students, and schools with more than 300 students. Within these stratifications, we randomly selected nonpublic schools and interviewed their administrators by telephone during May and June of 1984.

As Table 2.2 indicates, about half of the schools in the sample are Catholic schools, which tend to have much larger enrollments than other schools. More than one-fifth are Lutheran schools, and the remainder are about equally divided among other religiously affiliated[9] and nonsectarian schools. These proportions closely mirror the distributions of nonpublic schools statewide. More than half of the schools are located in suburban communities, and over one-third are in cities. Only 8 percent are located in rural areas. Larger schools tend to be located in the cities and suburbs, and there are no rural schools serving high school students. These distributions suggest that in the sample region, as elsewhere in the state, the supply of nonpublic schools is severely limited for residents of rural areas.

Enrollment Trends

Table 2.3 shows enrollment trends for the sample schools. Over the previous two years (1982–84), nearly half (46 percent) of the sample schools had stable enrollments. Twenty-eight percent had increased their enrollments by more than 5 percent, and 26 percent had decreased their enrollments by 5 percent or more. "Other religious" schools were by far the most likely to have increased their enrollments—nearly two-thirds of these schools grew over the two-year period. Lutheran schools tended to be stable; and Catholic schools were slightly more likely than others to have experienced declining

[9]This category includes Baptist, Christian, Interdenominational, and other affiliations.



SOURCE: National Center for Education Statistics, *The Condition of Education, 1983* (Washington, D.C.: U.S. Government Printing Office, 1983), p.19.

Fig. 2.2—Private elementary/secondary school enrollment, by affiliation

Table 2.2
SCHOOL CHARACTERISTICS
(In percent)

	Location			Enrollment				Grade Levels				
Category	Urban	Suburban	Rural	1–100	101–200	201–300	300+	K–6	K–9	K–12	7–12	Number
All schools	37.1	54.6	8.3	22.5	24.5	25.5	27.5	18.4	57.1	16.3	8.2	98
Affiliation												
Catholic	37.5	52.1	10.4	2.1	18.8	35.4	43.8	14.6	75.0	2.1	8.3	48
Lutheran	33.3	57.1	9.5	28.6	47.6	23.8	0	0	85.7	0	14.3	21
Other religious	35.7	64.3	0	42.9	35.7	7.1	14.3	7.1	14.3	78.6	0	14
Nonsectarian	42.9	50.0	7.1	60.0	0	13.3	26.7	66.7	0	26.7	6.7	15
Size												
1–100	22.7	59.1	18.2	—	—	—	—	—	—	—	—	22
101–200	37.5	54.2	8.3	—	—	—	—	—	—	—	—	24
201–300	52.0	44.0	4.0	—	—	—	—	—	—	—	—	25
301+	34.6	61.5	3.9	—	—	—	—	—	—	—	—	26
Grade levels												
K–6	23.5	58.8	17.7	50.0	22.2	16.7	11.1	—	—	—	—	18
K–9	37.5	53.6	8.9	10.7	28.6	32.1	28.6	—	—	—	—	56
K–12	43.8	56.3	0	37.5	25.0	12.5	25.0	—	—	—	—	16
7–12	50.0	50.0	0	12.5	0	25.0	62.5	—	—	—	—	8

enrollments. Smaller schools were the most volatile, with very small schools (100 or fewer students) showing the greatest tendency to lose enrollments, and slightly larger schools (101–200 students) showing the greatest tendency to gain students. The enrollment losses of very small schools may reflect the difficulties experienced by these schools in offering a broad program and developing a steady clientele. However, these are not, generally speaking, new schools. Only one school in the entire sample was newly established, and only three were less than five years old.

Somewhat surprisingly, very expensive schools—those with tuitions of $2,000 or more—were by far the most likely to have increased their enrollment. Along with very inexpensive schools (tuitions less than $500), they were also least likely to have lost students. None of the high schools lost students; schools serving grades K-12 and 7–12 were

Table 2.3

CURRENT AND PROJECTED ENROLLMENT TRENDS

(In percent)

	Enrollments 1982–84			At Full	Expected Enrollments			
Category	Increase	Stable	Decrease	Capacity	Increase	Stable	Decrease	Number
All schools	28.1	45.8	26.0	34.7	61.2	36.7	2.0	98
Affiliation								
Catholic	16.7	50.0	33.3	31.3	56.3	39.6	4.2	48
Lutheran	28.6	61.9	9.5	19.1	66.7	33.3	0	21
Other religious	64.3	14.3	21.4	35.7	71.4	28.6	0	14
Nonsectarian	30.8	38.5	30.8	66.7	60.0	40.0	0	15
Size								
1–100	19.1	33.3	47.6	27.3	63.6	36.4	0	22
101–200	41.7	45.8	12.5	16.7	66.7	33.3	0	24
201–300	24.0	52.0	24.0	40.0	52.0	48.0	0	25
301+	26.9	50.0	23.1	51.9	63.0	29.6	7.4	27
Grade levels								
K–6	31.3	43.8	25.0	50.0	55.6	44.4	0	18
K–9	19.6	51.8	28.6	26.8	64.3	33.9	1.8	56
K–12	50.0	18.8	31.3	37.5	56.3	43.8	0	16
7–12	37.5	62.5	0	50.0	62.5	25.0	12.5	8
Tuition ($)								(96)
0–499	33.3	58.3	8.3	25.0	75.0	25.0	0	12
500–999	22.0	43.9	34.2	27.3	61.0	36.6	2.4	41
1000–1999	21.2	54.6	24.2	42.4	51.5	45.5	3.0	33
2000+	75.0	12.5	12.5	70.0	70.0	30.0	0	10

more likely than elementary schools to have increased their enrollments.

Only one-third of the sample schools were operating at full capacity; the remainder had at least some openings that could be filled immediately. Nonsectarian schools were by far the most likely to be fully enrolled; Lutheran schools were most likely to be underenrolled. Larger schools were more likely to be fully enrolled, as were those serving only elementary (grades K-6) or only secondary (grades 7–12) students. As tuition levels increase, so does the tendency to be fully enrolled. The most expensive schools were nearly three times more likely than the least expensive to be operating at full capacity.

When asked about their expectations for future enrollments (over the next three years), 61 percent of the administrators predicted increases. This may simply reflect a natural optimism about demand for their school's services, or it may reflect knowledge of the fact that nonpublic school enrollments have been climbing in Minnesota in recent years. In any event, expected increases in enrollment were most pronounced among "other religious" schools and among those with the lowest (less than $500) and highest ($2,000 or more) tuition levels. Most administrators (62 percent) also reported that they expected to expand their school's programs over the next three years, either by adding courses (53 percent) or by adding grade levels (9 percent).

If previous enrollment trends and current subscription rates are an indication of demand for nonpublic school services, the greatest new demand seems to be for "other religious" and nonsectarian schools, for relatively large schools (which may have broader program offerings than smaller schools), and for very expensive schools. The types of parents selecting such schools and their motivations for the choices are discussed below.

Tuitions and Revenues

As Table 2.4 shows, most schools in our sample charged tuitions between $500 and $2,000. Less than one-quarter charged tuitions above or below this range. Nonsectarian schools were overrepresented in the highest tuition category, and most "other religious" schools charged over $1,000 in tuition. Most Catholic and Lutheran schools had tuition levels under $1,000. Very small (100 students or less) and very large (more than 300 students) schools had higher tuitions than mid-sized schools, while secondary schools (7–12 and K-12) tended to charge more than elementary schools.

Not all nonpublic schools charge tuition. As Table 2.5 shows, four schools in our sample (divided among Lutheran, other religious, and

Table 2.4

DISTRIBUTION OF NONPUBLIC SCHOOLS, BY TUITION LEVEL

(In percent)

	Tuition ($)				
Category	0–499	500–999	1000–1999	2000+	Number
All schools	12.5	42.7	34.4	10.4	96*
Affiliation					
Catholic	13.0	56.5	30.4	0	46
Lutheran	14.3	52.4	23.8	9.5	21
Other religious	7.1	21.4	64.3	7.1	14
Nonsectarian	13.3	6.7	33.3	46.7	15
Size					
1–100	13.6	31.8	40.9	13.6	22
101–200	25.0	54.2	20.8	0	24
201–300	8.7	47.8	34.8	8.7	23
301+	3.7	37.0	40.7	18.5	27
Grade levels					
K–6	22.2	22.2	27.8	27.8	14
K–9	11.1	66.7	22.2	0	52
K–12	12.5	6.3	68.8	12.5	16
7–12	0	0	62.5	37.5	8

*Two schools had variable or sliding-scale tuition rates and are not included here.

nonsectarian) charged no tuition. Nonpublic schools have diverse sources of revenue. Most receive at least some part of their operating budgets from fund-raising, church support, and federal aid, in addition to tuition. Nearly half of those in our sample receive revenues from fees to parents as well. As discussed in the next section, most also participate in state aid programs that provide materials and services to students.

Revenue sources vary for schools of different types. Catholic and Lutheran schools are far more likely to receive church support and federal aid than other schools, and are less likely to receive foundation grants. Lutheran and other religious schools are more likely to charge fees to supplement tuition revenues. Nonsectarian schools are most likely to receive revenues from endowments and foundation grants. Small schools are least likely to receive federal aid, endowment revenues, or foundation grants. Elementary schools are least likely to rely on fees to parents.

Table 2.5

SOURCES OF REVENUE

(In percent)

Category	Tuition	Fees	Church	Federal Aid	Endowment	Foundation Grants	Fund-raising	Number
All schools	95.8	48.0	77.6	68.4	15.3	15.3	85.7	98
Affiliation								
Catholic	100.0	31.3	95.8	89.6	14.6	12.5	97.9	48
Lutheran	90.5	76.2	100.0	71.4	9.5	4.8	76.2	21
Other religious	92.9	78.6	64.3	28.6	14.3	21.4	78.6	14
Nonsectarian	93.3	33.3	0	33.3	26.7	33.3	66.7	15
Size								
1–100	95.5	40.9	50.0	31.8	0	0	63.6	22
101–200	91.7	58.3	95.8	75.0	4.2	4.2	83.3	24
201–300	95.7	40.0	88.0	88.0	16.0	12.0	92.0	25
301+	100.0	51.9	74.1	74.1	37.0	40.7	100.0	27
Grade levels								
K–6	100.0	16.7	44.4	55.6	11.1	11.1	72.2	18
K–9	96.3	48.2	98.2	82.1	7.1	1.8	87.5	56
K–12	87.5	75.0	50.0	37.5	18.8	37.5	87.5	16
7–12	100.0	62.5	62.5	62.5	75.0	75.0	100.0	8

Fewer than half of the schools in our sample rely on tuitions for more than 40 percent of their overall revenues (Table 2.6). Not surprisingly, Catholic and Lutheran schools are least reliant on tuitions, with most receiving from 40 to 80 percent of their revenues from their church organizations. Most "other religious" and nonsectarian schools receive over 80 percent of their revenues from tuitions.

Clearly, tuition levels do not reflect the full cost of nonpublic schooling. The price paid by parents—particularly in church-supported schools—is but a portion of what is required to provide the quality and quantity of private school programs offered. While the tuition tax deduction functions to lower the price that at least some parents pay, other agencies—churches, foundations, the federal government, and, in Minnesota, the state government—further subsidize the schools to allow services and programs beyond what those prices could provide.

Despite the large proportion of Minnesota's nonpublic school students attending religiously affiliated schools, the state's policies for aiding nonpublic schools and students have survived judicial review. The survival of the tuition tax deduction is particularly notable, given recent judicial rulings on aid to nonpublic schools. In other states, similar policies have been overturned by the courts on the theory that

Table 2.6

PROPORTIONS OF REVENUE FROM VARIOUS SOURCES

(In percent)

Source of Revenue (%)	All Schools (N = 95)	Catholic (N = 45)	Lutheran (N = 21)	Other Religious (N = 14)	Nonsectarian (N = 15)
Tuition					
0	4.2	0	9.5	7.1	6.7
1–20	11.6	13.3	23.8	0	0
21–40	35.8	57.8	33.3	7.1	0
41–60	15.8	20.0	28.6	0	0
61–80	12.6	6.7	4.8	21.4	33.3
81–100	20.0	2.2	0	64.3	60.0
Church					
0	23.2	2.2	0	42.9	100.0
1–20	11.6	8.9	4.8	42.9	0
21–40	5.3	4.4	14.3	0	0
41–60	29.5	46.7	33.3	0	0
61–80	24.2	33.3	33.3	7.1	0
81–100	6.3	4.4	14.3	7.1	0
Fundraising and other sources*					
0	30.5	20.0	38.1	35.7	46.7
1–20	60.0	75.6	52.4	57.1	26.7
21–40	7.4	2.2	9.5	7.1	20.0
41–60	0	0	0	0	0
61–80	1.1	2.2	0	0	0
81–100	1.1	0	0	0	6.7

*Other sources include endowments, grants, and federal aid.

such aid, no matter how indirect, ultimately contributes to the advancement of religion and thereby violates the establishment clause of the First Amendment.

We shall next examine the Supreme Court's decision in *Mueller v. Allen*, the case challenging Minnesota's tax deduction statute, and discuss the features that, in the eyes of the Court, render the law constitutionally acceptable. In particular, we highlight the public policy questions that the court considers important to a determination of constitutionality, as they provide a basis for our subsequent examination of the tax deduction's effects.

THE CONSTITUTIONALITY OF MINNESOTA'S TAX DEDUCTION LAW

The history of state aid to nonpublic schools and students is marked by the persistence of its proponents in seeking constitutionally permissible avenues for state support and by the tortuous path of the courts in hammering out, on a case-by-case basis, the changing parameters of constitutionality. Because the vast majority of nonpublic schools are religiously affiliated, the Supreme Court's task has centered on interpretation of the "establishment" and "free exercise" clauses of the First Amendment. The former forbids laws "respecting an establishment of religion"; the latter forbids laws "prohibiting the free exercise" of religion. The state, in pursuing its many objectives, may do nothing that either advances or inhibits the exercise of religion. The inherent tension between the two religion clauses[10] has resulted in a case-by-case articulation of their respective scopes and a doctrine that, in the words of Justice White, "sacrifices clarity and predictability for flexibility."[11]

The flexibility of the Court has led to many finely drawn distinctions between types of aid to nonpublic schools and/or students. For example, a state may provide bus transportation to school for nonpublic school students,[12] but it may not provide bus transportation for field trips.[13] A state may provide secular textbooks for the use of nonpublic school students,[14] but it may not provide the same children with other instructional materials.[15] A state may reimburse private schools for the costs of maintaining state-mandated attendance records,[16] but it may not make reimbursements for the costs of grading state-mandated tests.[17] These distinctions, and the reasoning behind them, have left both proponents and opponents of state aid to nonpublic schools puzzled about the exact requirements of constitutionality.

This uncertainty has particularly plagued the debate about the desirability of offering tax credits or other financial compensation to

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[10]See Young, *Constitutional Validity of State Aid to Pupils in Church-Related Schools—An Inherent Tension Between the Establishment and Free Exercise Clauses*, 38 Ohio ST. L. J. 783 (1977).

[11]Justice White, Committee for Public Education and Religious Liberty v. Regan, 444 U.S. 646, 662 (1980).

[12]Everson v. Board of Education, 330 U.S. 1, 17 (1947).

[13]Wolman v. Walter, 433 U.S. 229, 255 (1977).

[14]Board of Education v. Allen, 392 U.S. 236, 248 (1968).

[15]Meek v. Pittenger, 421 U.S. 349, 362–66 (1975).

[16]Regan, 444 U.S. at 657.

[17]Levitt v. Committee for Public Education and Religious Liberty, 413 U.S. 472, 480 (1973).

offset tuition costs for private education. Important policy questions about the potential effects of such measures on enrollments, revenues, and the general health of public and private school education have often been subsumed by speculations about the constitutionality of a tax credit. The tuition tax credit debate may be advanced by a recent Supreme Court decision that addresses some of the issues that have heretofore been the subject of such speculation.

On June 29, 1983, the U.S. Supreme Court issued its opinion upholding the constitutionality of the Minnesota law allowing a state income tax deduction for dependents' educational expenses. That decision[18] resolved a lower-court dispute in which the First and Eighth Circuit Courts had issued opposing decisions about virtually identical state statutes in Minnesota and Rhode Island.[19] Following a long line of decisions in which tax deductions or credits for nonpublic school tuition had been found unconstitutional, the *Mueller* opinion was hailed by proponents of tuition tax credits as definitive guidance for fashioning other statutes that would withstand judicial scrutiny.

While the Court settled some of the issues that resulted in disparate opinions in the Minnesota and Rhode Island cases, the 5–4 decision left unresolved as many questions about state aid to nonpublic schools and parents as it put to rest. These questions include the distinction between a tax deduction and a tax credit, the definition of the class of citizens to whom a policy applies, and the appropriate measure of the "primary effect" of a subsidy. The decision does not address the requirements that might apply to a federal subsidy as opposed to a state subsidy, supporting a more clear-cut state interest in the education of its citizens.

The implications of the *Mueller* decision for the design of tuition tax credit or deduction policies and for evaluation of their effects are discussed below. We first examine the three-part test that provided the standard for the decision, and we describe how that test has been applied in previous cases regarding similar statutes. We then discuss the Court's reasoning in *Mueller*, including the major points raised in both the majority and dissenting opinions. Finally, we examine the meaning of the decision for the fashioning of a federal or state policy of tuition tax credits or other tuition tax subsidies.

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[18]Mueller v. Allen, 103 S. Ct. 3062 (1983).

[19]The Eighth Circuit Court upheld the Minnesota tax deduction statute in Mueller v. Allen, 676 F.2d 1195 (8th Cir. 1982), while the First Circuit overturned a nearly identical Rhode Island law in Rhode Island Federation of Teachers v. Norberg, 630 F.2d 855 (1st Cir. 1980).

The Three-Part Test of Constitutionality

For over a decade, the Court has applied a three-part test of constitutionality under the establishment clause to determine the acceptability of school aid programs.[20] To meet the criteria for constitutionality, the challenged statute (1) must have a valid secular purpose, (2) must have a primary effect that neither advances nor inhibits religion, and (3) must not foster excessive government entanglement with religion.

Secular Purpose. The secular purpose test is easily satisfied in school aid cases, because the Court looks to the stated legislative purpose of a law and finds a legitimate secular state interest in promoting educational quality and opportunity.[21] In *Mueller*, the Court found that although Minnesota's statute "contains no express statements of legislative purpose and its legislative history offers few unambiguous indications by actual intent,"[22] a secular purpose could be inferred.

Among the secular purposes cited by the Court are ensuring that the state's citizenry is well-educated; assuring the continued health of private schools which relieve the burden of the public schools; and providing educational alternatives as "a benchmark for public schools."[23] Presumably, the role of the tax deduction in supporting the continued health of nonpublic schools and in providing alternatives to public schools is due to its salutary effects on parental choice of school. Thus, the effects of the deduction on parent school choice are an issue of interest.

Primary Effect. The primary effect test determines whether the statute in question has the primary effect of either advancing or inhibiting religion. There are at least two caveats relevant to the application of this test. First, the Court has determined that a statute is unconstitutional if it has a direct and immediate effect of advancing religion, even though it has a legitimate primary effect.[24] Second, the Court has invalidated aid when the state lacked effective means of ensuring that the aid would fund only secular services.[25] The "effective means" standard, then, has become a bridge between the primary effect and excessive entanglement prongs of the three-part test.[26]

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[20]Lemon v. Kurtzman, 403 U.S. 602, 612–13 (1971).

[21]See, e.g., Committee for Public Education and Religious Liberty v. Nyquist, 413 U.S. 756, 773 (1973).

[22]Mueller, 103 S.Ct. at 3067, n. 4.

[23]Id. at 3067.

[24]Nyquist, 413 U.S. at 783, n. 39.

[25]Id. at 774–80; Regan, 444 U.S. at 659.

[26]See Note, *The Constitutionality of Tax Relief for Parents of Children Attending Public and Nonpublic Schools*, 67 Minn.L.R. 793 at 801.

The most immediately relevant interpretation of the primary effect test was given in *Committee for Public Education and Religious Liberty v. Nyquist*,[27] where the Court considered and invalidated a tax benefit statute similar in some respects to the one challenged in *Mueller*. The New York statute in *Nyquist* provided tuition reimbursements of $50 to $100 per child to low-income parents of nonpublic school students and an income tax deduction for tuition payments to higher-income parents.[28] The Court considered three factors in applying the primary effect test in *Nyquist*: (1) the identity of the direct recipient of the aid; (2) the breadth of the benefited class; and (3) the type of tax relief provided.

With respect to the identity of the recipient, the Court held that the ultimate effect of the tuition benefits was "unmistakably to provide financial support for nonpublic sectarian institutions," as they provided a financial incentive for parents to send their children to such schools and ensured their financial ability to do so. Thus, the fact that the statute directed benefits to parents rather than to the schools directly was not sufficient to render the law neutral with respect to religion.

The second factor, breadth of the benefited class, is important in determining whether advantages to religious institutions are primary or only incidental effects of a state's attempt to pursue secular purposes. The New York statute pertained only to parents of students in nonpublic schools—a class that is not inherently sectarian—but the Court looked beyond this designation to the fact that approximately 85 percent of New York's nonpublic schools were church-affiliated.[29] Thus, in *Nyquist* both the actual composition and the facial designation of the benefited class were of importance in applying the primary effect test.

The third factor, the type of tax relief provided by the statute, discredited the New York statute because the amounts of the tax subsidies were related to taxpayer income rather than to the actual tuition expenses paid. The Court explicitly reserved decision on the constitutionality of a "genuine tax deduction."[30]

In *Mueller*, the Court took great pains to distinguish its opinion from that in *Nyquist* regarding all three factors of the primary effect test. First, with respect to the identity of the recipient, the *Mueller*

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[27]413 U.S. 756 (1973).

[28]Id. at 783, 789–94.

[29]Id. at 768. The Court compared the *Nyquist* case to the broad class of intended beneficiaries in *Walz v. Tax Commission*, 397 U.S. 664 (1970), where it upheld property tax exemptions for religious, educational, or charitable institutions, a class not composed "exclusively or even predominantly of religious institutions." Nyquist, 413 U.S. at 794.

[30]Id. at 789 n. 49.

Court argued that the Minnesota statute provides religious institutions only an "attenuated financial benefit, ultimately controlled by the private choices of individual parents."[31] Although the same circumstance was true in *Nyquist*, the *Mueller* Court noted that this is only one factor among many to be considered, thus creating a distinction without a difference.

The de jure breadth of the benefited class—both public and nonpublic school parents in Minnesota's case—is somewhat easier to distinguish from the New York statute that benefited only nonpublic school parents. "Most importantly," the Court declared in *Mueller*, "the deduction is available for educational expenses incurred by *all* parents, including those whose children attend public schools and those whose children attend nonsectarian private schools or sectarian private schools."[32]

Although plaintiffs introduced evidence that more than 95 percent of Minnesota's nonpublic school students attend religious institutions and that the tax deductions flowed disproportionately to these students' parents, the Court held the statute's facial neutrality determinative. Despite its earlier approach in *Nyquist* and elsewhere, the Court argued that it would be inappropriate to base "the constitutionality of a facially neutral law on annual reports reciting the extent to which various classes of private citizens claimed benefits of the law."[33] Furthermore, the Court stated:

> [W]hatever unequal effect may be attributed to the statutory classification can fairly be regarded as a rough return for the benefits, discussed above, provided to the state and all taxpayers by parents sending their children to parochial schools. In the light of all this, we believe it wiser to decline to engage in the type of empirical inquiry into those persons benefitted by state law which petitioners urge.[34]

Thus, the Court adopted a de jure definition of primary effect much like the secular purpose test, referring only to the legislatively defined class and deliberately eschewing a de facto test of the statute's impact.

Finally, the Court found the type of tax relief offered in the Minnesota statute to be constitutionally preferable to the New York benefits, "which did not take the form of ordinary tax benefits."[35] The Court noted that Minnesota's educational expense deduction is only one among many state income tax deductions and that such legislative

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[31]103 S.Ct. at 3069.

[32]Id. at 3068.

[33]Id. at 3070.

[34]Id.

[35]Id. at 3068.

tax classifications are entitled to substantial deference. The Court distinguished *Nyquist* in a footnote:

> While the economic consequences of the program in *Nyquist* and that in this case may be difficult to distinguish, we have recognized on other occasions that 'the form of the [state's assistance to parochial schools must be examined] for the light that it casts on the substance.' The fact that the Minnesota plan embodies a 'genuine tax deduction' is thus of some relevance, especially given the traditional rule of deference accorded legislative classifications in tax statutes.[36]

Although the Court did not explicitly outline the difference between an impermissible tax subsidy and a "genuine tax deduction," the distinction seemed to rest on the similarity in form of the educational expense deduction and other permissible state income tax deductions and on the fact that the deduction is proportionate to expenses paid rather than, as in the New York case, to earned income.

In sum, the majority in *Mueller* found the Minnesota statute permissible under the primary effect test because it aids parents rather than religious institutions directly; it is available to both public and nonpublic school parents; its potentially unequal benefits provide a rough return for the costs borne by parochial school parents; and it is a "genuine tax deduction." The distribution of benefits—and costs—of the deduction in the context of overall school aid policies is a matter we explore further below.

Excessive Entanglement. In past cases, the Court has identified two aspects of the excessive entanglement test. The first is administrative entanglement resulting from state surveillance of religious institutions' compliance with the secular purposes of a law. The second is political entanglement which may stem from the "divisive political potential"[37] of a law that precipitates political division along religious lines.

In *Mueller*, the Court found no more danger of administrative entanglement than was already found to be permissible in *Board of Education v. Allen*, a case upholding state loans of secular textbooks to nonpublic school students.[38] The majority did not address the Minnesota provision allowing deductions for instructional materials, although state loans of such materials to nonpublic schools had been previously found unconstitutional.[39]

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[36]Id. at 3067–3068, n.6.

[37]Lemon, 403 U.S. at 622.

[38]392 U.S. 236 (1968).

[39]See Meek, 421 U.S. at 362–66, and Wolman, 433 U.S. at 250–51.

The political entanglement test was dismissed as being applicable only to cases "where direct financial subsidies are paid to parochial schools or to teachers in parochial schools."[40]

Discussion

The *Mueller* decision takes some fairly sharp turns away from interpretations applied to nonpublic school aid cases in the past. Given the rather erratic history of judicial reasoning in such cases, though, the majority opinion may be regarded as part of a pattern rather than as an exception to clearly defined rules. Still, for the four members of the Court who dissented in *Mueller*, the majority made a significant departure from established precedent. Quoting *Nyquist* at length, the minority argued:

> That decision established that a State may not support religious education either through direct grants to parochial schools or through financial aid to parents of parochial school students. *Nyquist* also established that financial aid to parents of students attending parochial schools is no more permissible if it is provided in the form of a tax credit than if provided in the form of cash payments. Notwithstanding these accepted principles, the Court today upholds a statute that provides a tax deduction for the tuition charged by religious schools .... The Minnesota tax statute violates the Establishment Clause for precisely the same reason as the statute struck down in *Nyquist*: it has a direct and immediate effect of advancing religion.[41]

Other legal scholars had also predicted a different outcome in *Mueller*, based on previous case law.[42] The changes in course may not only throw open to review some questions many had thought were settled (e.g., the constitutionality of aid for instructional materials), they also leave incomplete guidelines for determining when a class of beneficiaries is broad enough to pass the primary effect test, what distinguishes the primary effect of a statute from its stated legislative purpose, and when a tax relief measure sufficiently resembles permissible legislative tax classifications.

With respect to the Court's construction of permissible effects in *Mueller*, we will have to await further guidance on the question of when an "unequal effect" surpasses what might "fairly be regarded as a

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[40]103 S.Ct. at 3071, n. 11.

[41]103 S.Ct. at 3072.

[42]See, e.g., Note, *The Constitutionality of Tax Relief for Parents of Children Attending Public and Nonpublic Schools*, 67 Minn. L.R. 793; Note, *Mueller v. Allen: Do Tuition Tax Deductions Violate the Establishment Clause?* 68 Iowa L.R. 539; Comment, *Statute Granting Tax Deduction for Tuition Paid by Parents of Sectarian and Nonsectarian School Children Does Not Violate the Establishment Clause*, 61 Wash. U.L.R. 269.

rough return for the benefits . . . provided to the state and all taxpayers by parents sending their children to parochial schools."[43] At what point does the composition of the beneficiary class tip disproportionately toward one in which the statute, though facially neutral, must be deemed to effectively advance religion? At what point is the introduction of empirical evidence to define the de facto beneficiary class appropriate?

On the question of permissible tax relief, again we must await further guidance as to whether tuition tax deductions in states that do not offer other tax deductions deserve deference, and whether "genuine" tax credits (i.e., those based on actual expenses) are sufficiently similar to "genuine" tax deductions to pass muster. Although *Nyquist* was distinguished because of the unusual nature of its tax credit policy (which was fashioned as a reimbursement tied to income levels), other, more traditional state income tax credit schemes were invalidated by the Court in the years after *Nyquist*.[44] Because the grounds used to justify Minnesota's deduction did not explicitly define what constitutes a permissible tax subsidy, other state or federal efforts to fashion constitutional tuition tax deductions or credits will have to be examined on a case-by-case basis.[45]

Finally, the issues surrounding a federal tuition tax credit or deduction may be different from those pertinent at the state level. States have a recognized fundamental interest in providing for the education of their citizenry, but the Court has ruled that no such fundamental interest exists at the federal level.[46] The relevance of the state interest to a determination of permissible aid was suggested in *Mueller*, where the Court cited this interest as grounds for finding that the deduction has a valid legislative purpose:

> A state's decision to defray the cost of educational expenses incurred by parents—regardless of the type of schools their children attend—evidences a purpose that is both secular and understandable. An educated populace is essential to the political and economic health of any community, and a state's effort to assist parents in meeting the rising cost of educational expenses plainly serves this secular purpose of ensuring that the state's citizenry is well-educated.[47]

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[43]Mueller, 103 S.Ct. at 3070.

[44]See Franchise Tax Bd. v. United Americans for Public Schools, 419 U.S. 890 (1974); Minnesota Civil Liberties Union v. State, 302 Minn. 216, 224 N.W.2d 344 (1974), *cert.denied*, 421 U.S. 988 (1975); Kosydar v. Wolman, 353 F.Supp. 744 (S.D.Ohio 1972), *aff'd sub nom.* Grit v. Wolman, 413 U.S. 901 (1973).

[45]Even statutes identical to Minnesota's could be judged differently in states that do not provide other income tax deductions. Some state constitutions do not allow state tax credits or deductions for any purposes.

[46]See San Antonio v. Rodriguez, 411 U.S. 1, 18 (1973).

[47]103 S.Ct. at 3066–3067.

The federal government's more ambiguous role with respect to the provision of education may trigger a different treatment of a federal tuition tax credit or deduction.

In sum, while *Mueller* advances the search for constitutionally permissible avenues of state aid to nonpublic schools and students, it does not settle all the questions that will undoubtedly continue to arise about the exact parameters of constitutionality in other contexts.

Among the public policy issues identified as particularly important to the consideration of tax subsidies for educational expenses are the effects of such subsidies on the health and operations of nonpublic schools through their influence on parental choice of school, the distribution of benefits among classes of parents, taxpayers, and schools, and an implicit computation of costs and benefits to the public.

In the next two sections, we examine the costs of Minnesota's income tax deduction and other state aid policies, along with their effects on nonpublic schools and on parental schooling choices. We also look at utilization of the tax deduction by various types of public and private school households to ascertain who benefits from the deduction and how it affects the price of private schooling for households of different types.

III. THE IMPACT OF MINNESOTA'S NONPUBLIC SCHOOL AID POLICIES

This section examines the impact of Minnesota's school aid policies on nonpublic schools and nonpublic school students. It addresses the issue of who benefits from these programs, the equity implications of the findings, and the costs to the state of supporting nonpublic school aid policies. The analysis is based on our surveys of households and nonpublic schools in Minnesota and on data from the Minnesota Department of Revenue. These data sources are described in the Appendix to this report.

COSTS OF NONPUBLIC SCHOOL SUBSIDIES

As noted earlier, the income tax deduction for educational expenses is only one of a number of Minnesota policies that provide support to nonpublic schools and nonpublic school children. In fact, it is not the largest financial subsidy to nonpublic school parents and children, although its cost has grown substantially in recent years. Furthermore, the deduction can be claimed by public school parents as well. While private school tuition costs are undoubtedly larger than the incidental expenses incurred by public school parents, the total costs of the deduction—and its benefits—are not limited entirely to nonpublic school parents.

According to estimates of the Minnesota Department of Revenue, income tax deductions for dependents' educational expenses totaled nearly $32 million in 1980, an increase of more than two-thirds over the $19 million claimed in 1978. But the lost revenue to the state is far less than $32 million, since the amount that parents can actually deduct from their tax bill is the fraction of the deduction represented by their marginal tax rate. In fact, the cost of the deduction was estimated at slightly over $4.1 million in 1980, and $6.1 million in 1983 (see Table 3.1). In 1978, the deduction "cost" the state only $2.5 million. As we shall see, this nearly 150 percent increase in costs over five years is largely the result of higher utilization rates rather than larger claims. Because these increased utilization rates far outstripped the slight growth in nonpublic school enrollments, we believe they are probably the result of increased knowledge of the tax deduction.

Table 3.1

STATE AID FOR NONPUBLIC SCHOOL STUDENTS, 1982–83 SCHOOL YEAR

Program	Amount ($)
Nonpublic aid programs	
Textbooks and instructional aids	2,015,000
Health services	645,000
Guidance and counseling services	803,000
Administrative costs—paid to public schools for administering program	446,000
	3,909,000
Shared-time programs	1,947,000
Transportation aid (within district)	7,604,000
Education for limited English proficient students	120,000
Chemical use program (alcohol and drug abuse)	68,000
School lunch program	285,000
Total state and local programs	13,933,000
Lost revenue from educational expense income tax deductions[a]	6,100,000

SOURCE: Data provided by the Minnesota Legislative Analyst's Office.

[a]Most recent estimate from State Department of Revenue for calendar year 1983, which includes deductions for public and private school expenses.

These cost estimates reflect the deduction at its earlier levels of $500 and $700 for elementary and secondary school students. Clearly, costs will increase with the 1984 changes, which raised the maximum deduction levels for elementary and secondary school expenses by 30 and 40 percent, respectively. The increase in costs will depend on usage levels as well as the proportion of households claiming deductions at or near the maximum.

There are several other subsidies that increase the accessibility and quality of nonpublic school education available to Minnesota families. The costs of these other subsidies totaled $13,933,000 in 1982–83 (see Table 3.1). Transportation to and from school is provided on an equal basis to public and nonpublic students within school district boundaries. In addition, public schools must transport handicapped nonpublic school students to the facility where special education is provided. Public schools must also transport nonpublic school students to a public school or neutral site where health and guidance counseling

services are provided. These transportation costs are partly subsidized by the state, which provided $7.6 million for school transportation in 1982–83. This subsidy may be very important in parents' decisions about where to send their children to school. One of the major findings of Rand's earlier study of family choice of schools in Alum Rock, California, Minneapolis, Minnesota, and Mamaroneck, New York, was that the geographical location of the schools was the single most important factor in parents' placement decisions (Bridge and Blackman, 1978).

Certain state-funded categorical programs (e.g., special education and services to limited-English-speaking children) are made equally available to students in public and nonpublic schools. These services can be provided to nonpublic pupils at "neutral" sites or in public schools on a shared-time basis. Other public school programs (e.g., home economics and industrial arts) can also be provided to nonpublic pupils on a shared-time basis. Transportation is provided between nonpublic and public schools for time-sharing students, who are counted in full-time equivalent terms as part of the school district's enrollment for state foundation aid. In 1982–83, the shared-time programs cost about $1.9 million in additional state foundation aid.

In addition, Minnesota has a specific categorical program for nonpublic school aid that provides textbooks, instructional materials and equipment, standardized tests, health services, and guidance counseling services to requesting nonpublic school students and their schools. In 1982–83, expenditures for the nonpublic school aid program were $3.9 million, or about $42 per nonpublic school child. This is a substantial increase over the $1.7 million spent on nonpublic aids in FY 1979. This assistance—along with the state subsidies for transportation, special programs, and time-sharing—increases the attractiveness of nonpublic schools by expanding their offerings and services, while allowing nonpublic school parents to purchase more for less in the way of tuition.

In this sense, state support for education-related services to nonpublic school students functions much like the income tax deduction. The aid offsets the potential costs to parents of transportation and the increased tuition that would otherwise be charged for offering special services, textbooks, equipment, and enlarged programs. If Minnesota's nonpublic school/student subsidies (not including the tax deduction) were evenly distributed across nonpublic school students, the average per pupil amount would have been roughly $150 in 1982–83.

BENEFICIARIES OF NONPUBLIC SCHOOL SUBSIDIES[1]

Nonpublic Aid Program

A large majority of the schools in our sample (85 percent) participate in the nonpublic school aids program that provides guidance counseling, testing, and health services along with textbooks and instructional materials to students. Most of those that do not participate are in the "other religious" schools category. The administrators of these schools stated that they do not participate because they are opposed to state aid on philosophical grounds. Some nonsectarian and Lutheran schools also do not participate in the program. Small schools are less likely to participate than larger schools, and more expensive schools are less likely to participate than lower-tuition schools (Table 3.2). Of the participating schools, 95 percent receive books and other instructional aids; 89 percent receive health services; 71 percent receive testing services; and 67 percent receive guidance counseling services.

To gauge the effects of the aids program on school operations, we asked administrators of participating schools the following question: *In your opinion, if state aid to nonpublic schools were not available, how would this affect your school's costs and tuitions? Enrollments? Educational programs and services? How else would this affect your school's operations?* More than two-thirds (69 percent) of the respondents said the absence of aid would affect school costs and tuitions; 42 percent said enrollments would decline; and 30 percent said programs and services would be reduced. Of course, these are hypothetical answers and cannot be taken as firm indications of the numbers of schools that would in fact raise fees or cut programs. They are merely suggestive of the broad types of effects the aid programs have on school operations.

Cost and enrollment effects were most frequently cited by administrators of Catholic and Lutheran schools and schools in the middle tuition ranges. Administrators of nonsectarian and "other religious" schools, very small schools, and very expensive schools were less likely to see effects in any of the categories. Apparently, this relatively small subset of schools relies less heavily on state aid to augment services.

Overall, these data indicate that the nonpublic aids program supplements the programs and services of nonpublic schools in fairly important ways. The fact that most administrators feel the services provided are essential enough to warrant higher tuitions if the state subsidy

[1]This discussion is based on evidence from both the household and nonpublic school surveys and on data from the Department of Revenue on the use and importance of nonpublic school aids to various types of schools and households.

Table 3.2

ADMINISTRATORS' PERCEPTIONS OF EFFECTS OF NOT HAVING NONPUBLIC SCHOOL AIDS AVAILABLE

(Percent of schools receiving aid*)

Category	Increased Costs/Tuitions	Decreased Enrollments	Reduced Program	Number	Participation Rates
All schools	68.6	41.7	29.8	84	85.7
Affiliation					
Catholic	95.8	54.2	39.6	48	100.0
Lutheran	72.2	50.0	16.7	18	85.7
Other religious	52.5	0	12.5	8	57.1
Nonsectarian	20.0	0	20.0	10	66.7
Size					
1–100	53.8	7.7	15.4	13	59.1
101–200	75.0	60.0	35.0	20	83.3
201–300	92.0	54.0	32.0	25	100.0
301+	80.8	42.3	30.8	26	96.3
Grade levels					
K–6	57.1	35.7	7.1	14	77.8
K–9	90.4	53.0	38.5	52	92.9
K–12	54.5	0	27.3	11	68.8
7–12	71.4	28.6	14.3	7	87.5
Tuition level ($)				(82)	
0–499	54.5	27.3	18.2	11	91.7
500–999	91.7	66.7	36.1	36	87.8
1000–1999	82.1	25.0	32.1	28	84.8
2000+	28.6	0	0	7	70.0
Percent of revenues from tuition				(81)	
0–20	64.3	28.6	28.6	14	93.3
21–40	90.3	61.3	38.7	31	91.2
41–60	93.3	53.3	40.0	15	100.0
61–80	70.0	20.0	10.0	10	83.3
81–100	45.5	9.1	18.2	11	57.9

*Responses to the question about the effects of not having nonpublic school aid are not mutually exclusive and do not total to 100 percent.

were to disappear suggests that they view the services as part of the core program rather than merely "extras." The availability of the services allows schools to keep tuition levels lower than they might otherwise be. A sizable proportion of administrators also foresee enrollment and program effects if the aid were unavailable, which further suggests that if tuition were to exceed a hypothetical ceiling, enrollments would be lost or services would have to be cut.

Shared-Time Program

Only a third of the schools in our sample participate in shared-time programs with the public schools. Catholic and Lutheran schools, larger schools, and high schools are most likely to participate (Table 3.3). Of the nonparticipating schools, 44 percent cite transportation or scheduling problems; 37 percent say they do not need the services offered by the program; 31 percent say that time-sharing is not offered by their local public school district; and 15 percent do not participate for philosophical reasons.

In most of the participating schools (67 percent), fewer than 10 percent of the students participate in shared-time courses. However, Catholic schools rely on the program for a larger proportion of their

Table 3.3

ADMINISTRATORS' PERCEPTIONS OF EFFECTS OF NOT HAVING SHARED-TIME PROGRAMS AVAILABLE

(Percent of participating schools*)

Category	Increased Costs/Tuitions	Decreased Enrollments	Reduced Program	Number	Participation Rates
All schools	12.1	42.4	51.5	33	33.7
Affiliation					
Catholic	21.1	47.4	57.9	19	39.6
Lutheran	0	30.0	40.0	10	47.6
Other religious	0	50.0	50.0	2	14.3
Nonsectarian	0	50.0	50.0	2	13.3
Size					
1–100	0	50.0	0	2	9.1
101–200	14.3	52.9	42.9	7	29.2
201–300	0	38.4	61.5	13	52.0
301+	27.3	45.5	54.5	11	40.7
Grade levels					
K–6	0	33.3	33.3	3	16.7
K–9	17.4	47.8	52.2	23	41.1
K–12	0	66.7	66.7	3	18.8
7–12	0	0	50.0	4	50.0
Tuition level ($)				(32)	
0–499	0	100.0	75.0	4	33.3
500–999	21.4	35.7	35.7	14	34.1
1000–1999	8.3	41.7	58.3	12	36.4
2000+	0	0	50.0	2	20.0

*Responses to the question about the effects of not having shared-time programs are not mutually exclusive and do not total 100 percent.

students. Shared-time courses include special education courses, vocational education, home economics, science, music, art, physical education, and health.

When asked how their school would be affected if the shared-time program were not available, most of the administrators in participating schools foresaw program effects (52 percent); over 40 percent said their enrollments would decline; only 12 percent said they would increase tuitions to maintain the services offered by the program.

Administrators of schools at the lowest tuition level (less than $500) were most likely to say they would have to reduce their program offerings and least likely to say they would raise tuition. Similarly, none of the Lutheran, other religious, or nonsectarian school administrators cited cost effects; instead, they felt the loss of the program would cause reduced program offerings and decreased enrollments. Apparently they do not view the shared-time courses as important enough to continue if their costs had to be assumed by the schools.

Catholic school administrators seemed to view the shared-time program as most integral to their school operations. They were the most likely to talk about program and cost effects, and nearly half said that enrollment would be affected by the absence of the program.

The fact that 40 percent of school administrators thought they would lose enrollment if the program were discontinued suggests that the students who attend shared-time classes consider these courses very important in their choice of school.

We next consider the effect of transportation aid and the income tax deduction on the nonpublic schools and households in these programs. Unlike the programs discussed above, these two programs impact directly on nonpublic school households as well as on the schools. They are also the largest of the state subsidy programs.

Transportation Aid

The availability of free transportation for nonpublic school students[2] increases access to nonpublic schooling by decreasing the costs and inconvenience that might otherwise attend the choice of a school outside the student's immediate neighborhood. Other studies have found that location and other logistical factors play a large role in determining school choice, so it is likely that the transportation aid program is an important factor in parents' choice of schools.

[2]Not all nonpublic school students are eligible for transportation aid. The state subsidizes transportation costs for nonpublic school students within school district boundaries on the same basis as for public school students in that district, depending on distance of the school from the student's home and other travel factors.

Evidence from the Nonpublic School Survey. Virtually all (94 percent) of the school administrators in our sample regularly inform applicants' parents about the availability of transportation assistance, and most (62 percent) estimate that more than 60 percent of their students participate in the free transportation program (Table 3.4). Catholic and Lutheran schools have the highest rates of student participation. These tend to be the larger schools in the lower tuition ranges, categories in which participation rates are generally quite high. It is important to note, however, that a sizable proportion of the students in all types of schools receive transportation assistance.

Most administrators in the survey (53 percent) said they thought the availability of this program was "very important" to parents in choosing a school. An additional 32 percent said they thought it was at least "somewhat important" (Table 3.5). Administrators of Catholic schools

Table 3.4

USE OF TRANSPORTATION AID

(Percent of schools)

Category	Parents Informed About Free Transportation	Students Who Use Transportation Aid (%)						
		0	1-20	21-40	41-60	61-80	81-100	Number
All schools	93.8	3.1	10.2	11.2	13.3	27.6	34.7	98
Affiliation								
Catholic	97.9	0	10.4	8.3	10.4	27.1	43.8	48
Lutheran	100.0	0	0	4.8	14.3	42.9	38.1	21
Other religious	71.4	7.1	14.3	21.4	14.3	21.4	21.4	14
Nonsectarian	92.9	13.3	20.0	20.0	20.0	13.3	13.3	15
Size								
1-100	85.7	9.1	9.1	27.3	9.1	31.8	13.6	22
101-200	91.7	4.2	8.3	4.2	16.7	29.2	37.5	24
201-300	100.0	0	12.0	4.0	16.0	20.0	48.0	25
301+	96.3	0	11.1	11.1	11.1	29.6	37.0	27
Grade levels								
K-6	88.2	11.1	11.1	11.1	11.1	16.7	38.9	18
K-9	98.2	0	0	7.1	14.3	25.0	41.1	56
K-12	81.3	6.3	6.3	25.0	12.5	31.3	18.8	16
7-12	100.0	0	0	12.5	12.5	62.5	12.5	8
Tuition level ($)								(96)
0-499	90.9	16.7	8.3	8.3	0	25.0	41.7	12
500-999	97.6	2.4	9.8	7.3	7.3	26.8	46.2	41
1000-1999	87.9	0	6.1	21.2	18.2	27.3	27.3	33
2000+	100.0	0	20.0	0	30.0	40.0	10.0	10

Table 3.5

ADMINISTRATORS' PERCEPTIONS OF EFFECTS OF TRANSPORTATION AID

(Percent of schools)

	Importance to Parents				Percent of Students Who Would Be Unable to Attend Without Aid						
Category	Very	Somewhat	Not Very	Number	0	1–20	21–40	41–60	61–80	81–100	Number
All schools	53.2	31.9	14.9	94	16.1	35.8	27.2	17.3	2.5	1.2	81
Affiliation											
Catholic	72.9	25.0	2.1	48	2.4	39.0	29.3	22.0	4.9	2.4	41
Lutheran	47.6	28.6	23.8	21	5.3	36.9	42.1	15.8	0	0	19
Other religious	15.4	46.2	38.5	13	70.0	20.0	10.0	0	0	0	10
Nonsectarian	25.0	50.0	25.0	12	36.4	36.4	9.1	18.2	0	0	11
Size											
1–100	21.1	42.1	36.8	19	47.1	29.4	17.6	5.9	0	0	17
101–200	69.6	17.4	13.0	23	9.5	14.3	52.4	14.3	9.5	0	21
201–300	68.0	28.0	4.0	25	0	57.1	14.3	28.6	0	0	21
301+	48.2	40.7	11.1	27	13.6	40.9	22.7	18.2	0	4.6	22
Grade levels											
K–6	53.3	33.3	13.3	15	28.6	28.6	14.3	21.4	7.1	0	14
K–9	62.5	28.6	8.9	56	6.3	31.3	37.5	20.8	2.1	2.1	48
K–12	33.3	46.7	20.0	15	45.5	27.3	18.2	9.1	0	0	11
7–12	25.0	25.0	50.0	8	12.5	87.5	0	0	0	0	8
Tuition level ($)											
0–499	70.0	30.0	0	10	0	33.3	44.4	22.2	0	0	9
500–999	65.0	20.0	15.0	40	11.1	19.4	36.1	25.0	5.6	2.8	36
1000–1999	37.5	46.9	15.6	32	25.0	45.8	20.8	8.3	0	0	24
2000+	30.0	40.0	30.0	10	30.0	60.0	0	10.0	0	0	10

were most likely to say the aid is very important; administrators of schools in the "other religious" category were least likely to attribute much importance to transportation as a factor in parental choice. Elementary school administrators were far more likely than secondary school administrators to see the aid as important. Interestingly, there seems to be a direct inverse correlation between tuition level and the perceived importance of transportation aid. The higher the tuition level, the less important transportation assistance appears to be as a factor in parents' choice of school.

Administrators were also asked to estimate how many of their students would be unable to attend the school if free transportation were not available. Of the 81 who could make such an estimate, 48 percent thought more than 20 percent of their students would be unable to attend without the aid. Catholic and elementary school administrators gave the highest estimates, while administrators of secondary and "other religious" schools gave the lowest estimates. Administrators of schools at the lower tuition ranges also thought that more of their students would be unable to attend than did administrators of more expensive schools.

Evidence from the Parent Survey. Approximately 60 percent of the nonpublic school parents in our sample said their children used the free bus service. As Table 3.6 shows, about 40 percent of these parents said the availability of the service was very important, and another 26 percent said it was somewhat important in their decision to send their child to a private school. Lower-income parents were more likely to say the aid was "very important" to their choice, as were parents of elementary school children and parents who had themselves attended public rather than private schools.

Parents who considered the availability of the service important were asked if they would have sent their children to private schools had the service not been available. Twenty-two percent said they would not have made this choice had bus service not been available.

Nearly half of all low-income private school parents and nearly the same proportion of parents with incomes between $25,000 and $50,000 were users of transportation aid (Table 3.7). These proportions were substantially higher than those in either of the other two income ranges shown in Table 3.7. Users of transportation aid were concentrated in low-tuition Catholic and Lutheran schools. Elementary school-age children were much more likely to use the aid. Children from both urban and rural households were more likely to use the aid than suburban children. Interestingly, parents who claimed the income tax deduction for private school expenses were substantially less likely to use transportation aid than were nonclaimants. It would seem that the two subsidies benefit somewhat different types of households.

Table 3.6

IMPORTANCE OF FREE TRANSPORTATION AID IN CHOICE OF PRIVATE SCHOOL

(Percent responding)

Parent Category	Very Important	Somewhat Important	Not Important	Number
All respondents	39.7	25.6	34.6	78
Income				
Less than $25,000	43.5	26.1	30.4	23
$25,000–50,000	40.5	18.9	40.5	37
$50,000 or more	37.5	37.5	25.0	16
Grade				
Elementary	45.2	19.1	35.7	42
Secondary	33.3	33.3	33.3	36
Mother's schooling				
Public school only	44.7	29.0	26.3	38
Private school only	30.8	30.8	38.4	13
Public and private school	38.5	19.2	42.3	26

The Income Tax Deduction

To be eligible to use the tax deduction, households must fulfill two criteria: They must have at least one dependent on whose behalf they incur educational expenses, and they must itemize deductions rather than claiming the standard deduction on their state tax forms. Both public and private school parents are eligible to claim a deduction for educational expenses.

Evidence from the Nonpublic School Survey. The administrators we surveyed attributed less importance to the income tax deduction than to transportation aid as a factor in parental choice of schools. Virtually all (98 percent) of the administrators knew about the income tax deduction, and most (74 percent) said they usually informed parents about the deduction (Table 3.8). However, only one-third said they thought the deduction was "very important" to most parents' ability to send their children to a nonpublic school; another 38 percent said they thought it was "somewhat important." Those most likely to see the deduction as very important were administrators of Catholic schools, elementary schools, and schools with lower tuition levels. However, administrators of schools at the lowest tuition levels (less than $500) were least likely to inform parents about the deduction.

Most administrators (53 percent) said they felt that the deduction has little or no effect on nonpublic schools' enrollments or tuition

Table 3.7

CHARACTERISTICS OF PRIVATE SCHOOL HOUSEHOLDS USING FREE BUS TRANSPORTATION

(Percent of subgroup)

Variable	Users	Nonusers	Number
All respondents	38.0	62.0	137
Family income			
Less than $15,000	47.1	52.9	17
$15,000–25,000	21.7	78.3	23
$25,000–50,000	45.7	54.3	70
$50,000+	21.7	78.3	23
Tuition level ($)			
Less than 500	49.1	50.9	57
$500–999	39.4	60.6	33
$1000–1999	19.2	80.8	26
$2000+	12.5	87.5	16
Type of school attended			
Catholic	44.2	55.8	86
Lutheran	42.9	57.1	14
Other religious	14.3	85.7	21
Nonsectarian	31.3	68.8	16
Grade level of child			
Elementary	46.0	54.0	74
Secondary	28.6	71.4	63
Residential location			
Urban	41.9	58.1	86
Suburban/medium city	30.4	69.6	46
Rural/small city	40.0	60.0	5
Use of tax deduction			
Used the deduction	33.3	66.7	84
Didn't use deduction	45.3	54.7	53

Table 3.8

ADMINISTRATORS' PERCEPTIONS OF EFFECTS OF TAX DEDUCTION

(Percent of schools)

Category	Inform Parents About Deduction	Importance to Parents				General Effects			Number
		Very	Somewhat	Not Very	No Opinion	Helps Parents	Increases Enrollment	Little or No Effect	
All schools	73.7	32.6	37.9	27.4	2.1	32.6	14.6	52.9	95
Affiliation									
Catholic	85.1	42.6	36.2	17.0	4.3	31.1	17.8	51.1	47
Lutheran	52.4	28.6	28.6	42.9	0	30.0	15.0	55.0	21
Other religious	61.5	7.7	61.5	30.8	0	36.4	18.2	45.5	13
Nonsectarian	78.6	28.6	35.7	35.7	0	38.5	0	61.5	14
Size									
1–100	57.1	28.6	28.6	42.9	0	35.3	11.8	52.9	21
101–200	60.9	43.5	26.1	30.4	0	18.2	22.7	59.1	23
201–300	79.2	41.7	37.5	20.8	0	43.5	17.4	39.1	24
301+	92.6	18.5	55.6	18.5	7.4	33.3	7.4	59.2	27
Grade levels									
K–6	70.6	47.1	41.2	11.8	0	31.3	18.8	50.0	17
K–9	76.4	38.2	30.9	27.3	3.6	30.2	15.1	54.7	55
K–12	73.3	6.7	60.0	33.3	0	30.8	15.4	53.9	15
7–12	62.5	12.5	37.5	50.0	0	57.1	0	42.9	8
Tuition level ($)									
0–499	36.4	36.4	18.2	45.5	0	16.7	25.0	58.3	11
500–999	80.0	40.0	30.0	27.5	2.5	21.6	16.2	62.2	40
1000–1999	75.0	28.1	46.9	21.9	3.1	51.7	10.3	37.9	32
2000+	80.0	10.0	60.0	30.0	0	33.3	0	66.7	10

levels. Most of those who perceived any effect said it helps parents to afford nonpublic schooling; only 15 percent thought the deduction influences enrollments directly. Administrators of nonsectarian schools and those in the highest tuition bracket were least likely to say that the deduction affects nonpublic schools.

Evidence from the Parent Survey. Table 3.9 summarizes the level of knowledge about and use of the income tax deduction among the households in our sample. Although nearly two-thirds of our respondents had heard of the deduction, only 28 percent had ever claimed it. Both knowledge and use are much higher for private school parents than for public school parents. Knowledge and use of the deduction both differed significantly by family income, while knowledge appeared to vary by mother's level of education. Households who knew of the deduction and did not use it were primarily public school parents, many of whom said they thought it did not apply to public school children.

Table 3.9

KNOWLEDGE AND USE OF INCOME TAX DEDUCTION

(Percent of respondents)

Respondent Characteristics	Heard of Deduction	Ever Claimed Deduction	Number
All respondents	63.0	28.2	476
School choice			
Public	55.3	14.7	339
Private	81.8	61.3	137
(χ^2)	(29.3[a])	(105.0[a])	
Family income			
Less than $15,000	42.6	9.8	61
$15,000–25,000	60.6	20.2	99
$25,000–50,000	70.0	36.7	210
$50,000 or more	65.1	31.4	86
(χ^2)	(16.7[a])	(21.4[a])	
Mother's education			
Non–high school graduate	46.9	18.7	32
High school graduate	51.8	23.6	199
Some college	75.2	32.6	129
College graduate	72.7	33.3	117
(χ^2)	(27.2[a])	(6.2)	

[a]Computed chi-square statistic is greater than $\chi^2_{0.05}$ with the appropriate degrees of freedom.

The sources of information about the deduction differed by school choice and income. Private school parents were far more likely to learn about the deduction from the school itself (36 percent) and from the tax forms (74 percent) than were public school parents; only 10 percent of the public school parents received information about the deduction from their school. A little more than half of them had gained their knowledge from the tax form. Middle- and higher-income households were also much more likely to report tax forms as being their source of information.

When asked how important the availability of the deduction was in their choice of a private school, only 10 percent of private school users said the deduction was very important; another 26 percent said it was somewhat important (Table 3.10). Fully 98 percent of these parents said they would have sent their children to private schools even if the deduction had not been available. By contrast, 40 percent of those who received free bus transportation to private schools had said the availability of this service was very important, and another 26 percent said it was somewhat important.

Table 3.10 also indicates the importance of the tax deduction to school choice, by selected household characteristics. No clear-cut patterns emerge. Lower-income households tended to think the deduction was important, as did respondents with higher levels of education and those with children in secondary school. However, none of these relationships is statistically significant.

To identify the beneficiaries of the tax deduction policy, we asked parents who had heard of the deduction whether they claimed it in 1983 and, if so, how large a deduction they took. The per-child amounts are shown in Table 3.11, by household characteristics. Only 30 percent of those who had heard of the deduction claimed it in 1983, including only 11.5 percent of knowledgeable public school parents, 8.3 percent of lower-income parents, and 7.7 percent of nonwhite parents. (These groups were also far less likely than others to have heard about the deduction.) For all of these groups, the amounts claimed were quite small, nearly always below $100.

Those most likely to have claimed the deduction were upper-income households, parents of children in Catholic schools and nonsectarian schools, parents of elementary school children, and parents of children in high-tuition schools. As we saw earlier, parents who used the transportation subsidy were less likely than others to also claim the income tax deduction.

The largest claims appeared to be made by parents of children in nonsectarian and "other religious" schools, which tend to charge the highest tuition. However, because many respondents could not

Table 3.10

IMPORTANCE OF THE AVAILABILITY OF STATE INCOME TAX DEDUCTION, BY HOUSEHOLD CHARACTERISTICS

(Percent of private school parents)

Characteristic	Very Important	Somewhat Important	Not Important	Number
All respondents	10.0	26.2	63.8	80
Income				
Less than $25,000	13.3	33.4	53.3	15
25,000–50,000	10.6	21.3	68.1	47
50,000 +	6.3	31.2	62.5	16
Mother's education				
High school or less	10.0	16.7	73.3	30
Some college	8.7	30.4	60.9	23
College graduate	11.1	33.3	55.6	27
Mother's schooling				
Public school only	17.6	20.6	61.8	34
Private school only	8.7	39.1	52.2	23
Both public and private schools	0.0	21.7	78.3	23
Grade of enrolled child				
Elementary	6.7	22.2	71.1	45
Secondary	14.3	31.4	54.3	35

remember the amount they claimed, it is difficult to discern other patterns in benefit amounts. Below, we present data from the Minnesota Department of Revenue on claims by income classes to augment our survey data.

Evidence from the Minnesota Department of Revenue. As mentioned earlier, households eligible to use the educational expenses deduction must (1) have a dependent and (2) itemize deductions on their state income tax form.

Table 3.12 shows the number of returns fulfilling both these criteria in 1978 and 1980 by taxable income and the number and proportion of returns within each bracket actually claiming the deduction. Several interesting findings emerge.

First, although the total number of itemized returns on which one or more dependents were claimed decreased slightly from 1978 to 1980, the proportion claiming the deduction increased from 6.3 percent to 15.9 percent, an increase of almost 150 percent over the two years. Second, the proportions of households actually claiming the deduction rise with income, from a low of about 5 percent of households with

Table 3.11

USE OF TAX DEDUCTION IN 1983 BY HOUSEHOLDS WHO KNEW OF THE DEDUCTION

Variable	Percentage of Households in Subgroup Claiming ($ per child)						Number	Percent of Households with No Knowledge[c] (N = 476)
	0[a]	1–99	100–199	200–499	500+	Unknown[b]		
All respondents	69.9	7.2	2.5	3.6	2.5	14.3	278	41.3
Type of school								
Public	88.5	6.0	1.6	0	0.6	3.3	183	46.2
Catholic	27.7	13.9	3.1	12.3	3.1	40.0	65	24.4
Lutheran	50.0	0	20.0	10.0	0	20.0	10	28.6
Other religious	63.6	0	0	0	18.2	18.2	11	47.6
Nonsectarian	30.0	0	0	10.0	40.0	40.0	10	37.5
Family income								
Less than $15,000	91.7	0	0	0	0	8.3	24	60.7
$15,000–25,000	71.9	8.8	3.5	3.5	3.5	8.8	57	42.4
$25,000–50,000	66.9	7.5	3.0	3.8	3.0	15.8	133	36.7
$50,000 or more	63.0	7.4	1.9	5.6	0	22.2	54	37.2
Race								
White	68.6	7.6	2.7	3.8	2.7	14.8	264	39.4
Black and other	92.3	0	0	0	0	7.7	13	62.9
Grade level of child								
Elementary	64.2	7.5	3.7	3.7	3.0	17.9	134	38.5
Secondary	75.2	6.9	1.4	3.5	2.1	11.0	145	44.0
Tuition level ($)[d]								
Less than 500	35.7	9.5	4.8	7.1	0	42.9	42	26.3
500–999	41.7	8.3	4.2	12.5	16.7	16.7	24	27.3
1000–1999	25.0	12.5	6.3	18.8	0	37.5	16	38.5
2000 or more	30.8	0	0	7.7	15.4	46.2	13	23.5
Use of free transportation[d]								
User	43.2	10.8	5.4	10.8	2.7	27.0	37	30.6
Nonuser	28.8	8.5	3.4	10.2	8.5	40.7	59	28.8

[a]Respondents who said they did not claim the deduction or who did not know whether they had claimed the deduction are listed here as having made no claim.

[b]Respondents who said they had claimed the deduction but could not remember the amount claimed are listed as "Unknown."

[c]Respondents who said they had not heard of the deduction are excluded from all previous columns and are represented here as a proportion of all respondents.

[d]Private school parents only.

Table 3.12

NUMBER OF ITEMIZED RETURNS WITH ONE OR MORE DEPENDENTS CLAIMING TAX DEDUCTION, BY MINNESOTA GROSS INCOME, 1978 AND 1980

	1978			1980		
Minnesota Gross Income ($)	Itemized Returns Claiming Dependents	Returns Claiming Deduction	Percentage of Eligible Returns Claiming Deduction	Itemized Returns Claiming Dependents	Returns Claiming Deduction	Percentage of Eligible Returns Claiming Deduction
< 0	799	57	7.1	1,275	108	8.5
1–2,499	1,900	0	0	2,079	198	9.5
2,500–4,999	6,200	400	6.5	4,224	396	9.4
5,000–9,999	38,100	1,500	3.9	25,270	1,596	6.3
10,000–14,999	71,600	3,900	5.4	47,200	6,000	12.7
15,000–19,999	103,400	5,200	5.0	65,869	7,761	11.8
20,000–24,999	107,900	7,600	7.0	82,983	13,731	16.5
25,000–29,999	76,100	5,300	7.0	81,988	15,124	18.4
30,000–39,999	64,200	3,700	5.8	102,942	18,620	18.1
40,000–49,999	18,281	1,717	9.4	37,905	7,315	19.3
50,000–74,999	13,620	1,540	11.3	22,200	3,840	17.3
75,000–99,999	4,060	640	15.8	6,200	1,120	18.1
100,000–124,999	1,480	250	16.9	2,600	620	23.8
125,000–149,999	680	110	16.2	1,400	330	23.6
150,000–174,999	440	77	17.5	840	190	22.6
175,000–199,999	290	30	10.3	342	90	26.3
> 200,000	603	126	20.9	1,100	246	22.4
Total	509,653	32,147	6.3	486,417	77,285	15.9

SOURCE: Minnesota Department of Revenue.

incomes less than $20,000 to about 18 percent of households with incomes over $150,000. The proportions are significantly higher in 1980, but the pattern (an almost monotonically increasing relationship) remains the same. Third, the large increase in numbers of households within each income bracket claiming the deduction is itself interesting and probably can be attributed more to a learning process than to any large increases in the numbers of children attending private school. As discussed in Section II, the constitutionality of the deduction was being tested in the courts during this time, and the case received considerable media attention.

Table 3.13 shows that the size of the average deduction claimed increases sharply in both years at income levels of $50,000 and above. This confirms the trends found in our own survey. The propensity to use the tax deduction increases with income, as does the size of the claim. The average size of deductions claimed in the two years is also of interest: $578 in 1978, but only $385 in 1980. For incomes below $50,000, the difference is particularly marked; the average deduction within each income bracket fell between 35 and 55 percent over the two years. It is evident that more households with considerably smaller claims are using the deduction. Increased information in the media due to the court cases may be the dominating factor here: Households with children in public schools and in lower-tuition private schools may have learned of their eligibility to use the deduction because of media coverage. This would help explain both the trend seen earlier (the increase in proportions of returns claiming the deduction, particularly in lower gross income ranges) and the much smaller average deduction. It appears that the rapidly increasing costs of the deduction through 1983 are largely due to increasing utilization rates.

IMPACT ON SUPPORT FOR PUBLIC EDUCATION

One of the major arguments put forth by opponents of subsidies for nonpublic school expenses is that, by encouraging some parents—particularly the more affluent—to leave the public schools, the subsidies may indirectly decrease public support for public education funding. On the other side of the question is the Supreme Court's assertion that support for private school expenses helps assure "the continued health of private schools which relieve the burden of the public schools" and provides "a rough return for the benefits . . . provided to the state and all taxpayers by parents sending their children to paro-

Table 3.13

AVERAGE DEDUCTION FOR DEPENDENTS' EDUCATIONAL EXPENSES, BY MINNESOTA GROSS INCOME, 1978 AND 1980

Minnesota Gross Income ($)	Average Deduction for Dependents' Educational Expenses ($)	
	1978	1980
< 0	921	452
1–2,499	—	299
2,500–4,999	505	393
5,000–9,999	577	308
10,000–14,999	539	246
15,000–19,999	439	246
20,000–24,999	555	290
25,000–29,999	575	360
30,000–39,999	591	455
40,000–49,999	737	393
50,000–74,999	716	616
75,000–99,999	1,014	1,018
100,000–124,999	1,005	825
125,000–149,999	993	887
150,000–174,999	930	948
175,000–199,999	831	790
> 200,000	1,168	1,075
Total	578	385

chial schools."[3] Following this line of argument, private school parents who receive such support might be *more* willing to support taxes for public schools if they do not feel they are carrying as large a "double burden."

While we cannot definitively answer the question of how the tax deduction (or other nonpublic school support) influences parents' willingness to pay for public schools, we do have some evidence from our survey about parents' expressed willingness to support a local tax increase for public schools in their district. Table 3.14 shows the responses to this question by school choice, family income, and use of the tax deduction.

As might be expected, public school parents were significantly more likely to say they would support a tax increase than private school parents; however, more than half of the private school parents said

[3]Mueller v. Allen, 103 S.Ct. at 3067, 3070.

Table 3.14

SUPPORT FOR PUBLIC SCHOOL TAX INCREASES, BY HOUSEHOLD CHARACTERISTICS

(Percent of respondents)

Variable	Favor	Oppose	Don't Know	Number
All respondents	71.4	23.6	5.0	475
Type of school child attends				
Public	77.5	18.6	3.9	338
Private	56.2	35.8	8.0	137
Family income				
Less than $15,000	75.4	21.3	3.3	61
(Public/Private)	(84.1/52.9)	(15.9/35.3)	(0/11.8)	44/17
$15,000–25,000	79.8	16.2	4.0	99
(Public/Private)	(86.8/56.5)	(10.5/34.8)	(2.6/8.7)	76/23
$25,000–50,000	68.4	27.8	3.8	209
(Public/Private)	(74.1/57.1)	(23.7/35.7)	(2.2/7.1)	139/70
$50,000 or more	68.6	23.3	8.1	86
(Public/Private)	(73.0/56.5)	(19.0/34.8)	(7.9/8.7)	63/23
Use of tax deduction				
Have used deduction	60.2	35.3	4.5	133
(Public/Private)	(63.3/58.3)	(34.7/35.7)	(2.0/6.0)	
Have not used deduction	75.7	19.0	5.3	
(Public/Private)	(79.9/52.8)	(15.9/35.8)	(4.2/11.3)	

they would tend to vote for such a measure. For public school parents, especially, the willingness to support increased taxes for public schools was inversely related to income: lower-income parents were more likely to vote "yes" than upper-income parents. The same pattern was not true for private school parents.

Interestingly, parents who used the tax deduction were *less* likely overall to support public school taxes than nonusers. However, this was true for public school users and *not* for private school users. Public school deduction-users probably tend also to be higher-income parents (who indicated that they were less likely than lower-income parents to support increased taxes). There are at least two possible explanations for this finding, one relating to income and the other to deduction use. Since local school revenues are primarily derived from property taxes, higher-income households—who probably have more expensive homes and thus higher property taxes—may feel somewhat less inclined to support such tax hikes. Alternatively, public school deduction-users must be incurring educational expenses for services

outside the public schools (e.g., tutoring) or must be deducting fees charged by the public schools (e.g., for athletic equipment, extracurricular courses, or activities). They may feel they are already paying enough (or too much) for their children's education and hence may be less inclined to pay more taxes for public school support.

The fact that private school deduction-users were slightly more likely than non-users to support public school taxes may provide very tentative and modest support for the argument that private school parents are more likely to support public schools when their overall "burden" is lessened. While private school attendance does seem to lessen parents' propensity to support increased taxes for public schools, use of the tax deduction, in itself, does not add to this effect.

SUMMARY

In the view of the nonpublic school administrators in our sample, Minnesota's nonpublic school aid policies do function to varying degrees to increase private school enrollments by increasing services and/or lowering costs. However, there is little evidence that at the time of the survey, demand for nonpublic schooling exceeded the supply of places for students in private schools. Except for nonsectarian and very expensive schools, most private schools were operating with enrollments below capacity.

A large majority (85 percent) of these schools participate in the nonpublic aids program, through which they receive books, instructional materials, guidance counseling, testing, and health services for their students. More than two-thirds of the participating schools' administrators thought they would have to increase tuition if the program were not available. Many also said enrollments and services would decline in the absence of aid.

Only one-third of the sample schools currently participate in the state-subsidized shared-time program which allows nonpublic school students to take courses in public schools. For those that do participate, however, the program is viewed as broadening services and boosting enrollments over what they would otherwise be.

Catholic schools seem to benefit most from all of the aid programs, relying most heavily on the state-supported services and perceiving the greatest effects on their enrollments and finances. Lutheran schools are also active participants in the programs, and they benefit a great deal. Other religious and nonsectarian schools, which tend to be small, relatively expensive, and most reliant on tuition as a source of revenue, are somewhat less involved in state aid programs and perceive them as less critical to their clientele or to school operations.

Our respondents do not perceive the tuition tax deduction as the most important of the state subsidies. Most of the nonpublic school administrators surveyed said they thought it had little or no effect on school enrollments or tuition levels, although 71 percent felt it had at least some effect on parents' abilities to send their children to nonpublic schools.

Both the propensity to use the deduction and the size of the deduction claimed are related to income, as evidenced by data from state income tax returns. Among our household survey respondents, knowledge and use of the deduction were related to both family income and private school choice. Even among those who had heard of the deduction, only 30 percent claimed it in 1983. By far the least likely to use the deduction were public school parents and low-income and minority households. Fully 98 percent of those who had ever claimed the deduction said they would still have sent their children to private schools, even in the absence of the deduction.

Although most parents of Catholic school children use the deduction, the distribution of benefits tends to favor upper-income parents with children in high-tuition private schools. Rather than expanding choice for those parents at the margin, the deduction appears to subsidize the choices of those who have already selected private schools and who can profit from this type of tax subsidy. Although this might seem to make the costs to the state of such a subsidy more predictable, utilization rates have grown dramatically in Minnesota, thus increasing costs substantially between 1978 and 1983. Knowledge about the deduction appears to be the main factor influencing utilization rates, and hence costs.

By contrast, state-subsidized transportation to school was viewed as a more important factor in school choice. Most nonpublic school administrators saw it as "very important" to parents' school choices; 85 percent said it was at least somewhat important. Nearly half of the administrators thought more than 20 percent of their students would be unable to attend without the transportation aid. This is reinforced by the parent survey. Twenty-two percent of those who used the free transportation service said they would not have sent their children to the private school they now attended if the aid had not been available.

Furthermore, the transportation subsidy appears to benefit a different class of parents than the income tax deduction. There is relatively little overlap among users of the deduction and users of transportation aid. The latter were much more likely to be low-income parents of children in lower-tuition schools and to have attended public schools themselves when they were younger. As will be discussed in Section IV, these households are more likely to be on the choice margin, making "active" choices of schools in response to price.

Finally, while we found that private school parents are less likely than other parents to support tax increases for public schools, there is no evidence that use of the tax deduction by private school parents adds to this effect. And since the deduction does not appear to determine choice of private schools, it would be difficult to argue that it, in itself, affects overall public support for public schools.

IV. MODELING PARENTS' SCHOOLING CHOICES

Our analysis is primarily concerned with the effect of Minnesota's nonpublic school aid policies on parental schooling choices and on the operations of nonpublic schools. An integral part of the analysis is an understanding of *how* parents make choices, which then provides the context for analyzing the effects of specific variables in encouraging or inhibiting such choices. This section first presents a theoretical framework for analyzing school choice behavior, along with several testable hypotheses deriving from the theory regarding the relationship between household characteristics and the propensity to choose private schools. The second part of the section discusses data from earlier studies and presents estimation results from several models of parental schooling choice behaviors.

A THEORETICAL FRAMEWORK FOR ANALYZING PARENTAL SCHOOLING CHOICE

Hypotheses regarding the effect of specific variables on the propensity to choose private schools tend to be theoretically indeterminate because school choice is a sequential decisionmaking process, and the hypothesized effects of some variables tend to be in opposite directions at different stages of the choice process.

Effect of Income

On the surface, it seems plausible that the propensity to choose private schools would be an increasing function of income. Higher-income households conceivably have both a greater taste for and ability to pay for private education. However, when the residential location decision is included, this relationship becomes less clear-cut. Households have some choice with respect to the quality of their public schools. Within a given metropolitan area, the quality of public education varies considerably across districts and neighborhoods. Empirical studies have shown that housing values reflect the quality of the public schools in the community. High-income households can afford to locate in the best school districts, where their expectations are best met; households at the low end of the income scale are less able to

select their desired quality of education, either public or private. This may be somewhat mitigated by the fact that low-income households could qualify for scholarships or other forms of tuition aid. Additionally, very low quality of public schools may provide an added impetus to search for affordable private schools. Middle-income households are less constrained in their choices but may find that public schools in their areas do not meet their expectations. Indeed, some may deliberately choose to move to areas where housing prices are lower, having already decided to send their children to private schools.

Effect of Price

Standard economic theory would imply that households face a downward-sloping demand curve for private education. Other things equal, the lower the price of available alternatives, the higher the propensity to choose among those alternatives.

The Minnesota tax deduction acts to lower the price of private schooling for eligible households (those who pay taxes and itemize expenses on their tax returns). The real value of the deduction varies with the household's marginal tax rate. The actual price of private schooling for eligible households is then $(1 - t)P$, where P is total private school costs and t is the marginal tax rate. Marginal tax rates in Minnesota vary between 1.6 and 16 percent of taxable income, but most households pay at least 10 percent. The effect of the deduction in lowering the price of schooling is actually rather small, and for a given tuition level the value of the deduction increases with the marginal tax rate (and, therefore, with income), as shown below:

Marginal Tax Rate, t (%)	Price of Schooling, P ($)	Reduction in Price Due to Deduction $(P-(1-t)P)$
10	500	50
13	500	65
16	500	80

If the price of schooling is greater than the maximum deduction allowed, the proportionate reduction in price may be considerably smaller than that implied by the marginal tax rate. For example, a family with a marginal tax rate of 10 percent who paid $1,000 in tuition costs when the maximum allowable deduction was $500 would save only $50 in taxes; this amounts to only a 5 percent decrease in price.

The availability of the tax deduction should increase the propensity of eligible households to choose private schools by enabling them to shift down their demand curves, but the strength of this price effect is uncertain and may be small. *A priori* we would expect the effect of a tax subsidy to increase with the size of the subsidy and the marginal tax rate faced by the taxpayer. (Thus, a federal tax subsidy might have stronger effects than a state subsidy, because the higher marginal federal tax rate faced by most taxpayers would increase the value of the deduction.)

Effects of Selected Demographic Characteristics

Demographic characteristics of households may be expected to exert considerable influence in shaping the demand for private schooling.

Parental Educational Level. Parents with higher educational attainment may also have a higher propensity for private education for their children. The relationship may be somewhat confounded, however, by the fact that such households also tend to have higher incomes and to be more aware of alternatives, both of which may predispose them to move to areas with higher public school quality, on the one hand, or to be more dissatisfied with public schools, on the other.

Type of Parental Schooling. Parents who have themselves attended private schools will probably have a strong tendency to select such schools for their children as well.

Religious Preferences. Nationwide, about 89 percent of all private schools are religiously affiliated; about four-fifths are Roman Catholic schools. Obviously, parents who place greater emphasis on religious values or religious training would be more likely to choose sectarian private schools. An additional motivation might be that religiously affiliated schools generally offer substantially reduced tuitions for their parishioners.

Residential Location. Households in urban areas are likely to have higher propensities to choose private schools because of the greater availability of such schools and because of perceptions that urban public schools are of lower quality than suburban public schools. Households in rural areas are likely to face problems of access, since there are few private schools in such areas.

EMPIRICAL FINDINGS FROM PREVIOUS STUDIES

The literature on factors influencing parental schooling choice has yielded fairly consistent findings about which types of parents choose private schools and why they do so. Research has also suggested some factors that are related to parents' propensities to actively seek out school alternatives. Less is known about how various incentives, including subsidies to parents or schools, influence the choice-making behavior of those parents "on the margin" of choosing between public and nonpublic schools.

Search Behavior

Choice of schools can be at least a two-stage process, consisting of the decision to search actively for school options and the actual selection of a particular school. However, the second stage may actually be a nondecision if the parent does not perceive school selection as a choice among alternatives. Public policies designed to encourage "choice" among schools are likely to have their greatest effect on those who perceive that schooling decisions are a matter for conscious deliberation. To understand how and why parents select private schools over no-cost public alternatives (or public schools when financial subsidies exist to offset private school costs), we must first understand when it is that parents perceive school selection as an active choice.

Previous studies of search behavior have found that a substantial number of public school parents give little thought to schooling options and passively opt for the public school closest to them. These parents tend to be less well-educated and less well-informed about alternatives, to have lower incomes, and to have attended public schools themselves (Cogan, 1979; Bridge and Blackman, 1978; Kamin and Erickson, 1981; Nault and Uchitelle, 1982; Williams, Hancher, and Hutner, 1983). School location (convenience and distance) is particularly important in schooling choices for public school parents (Kamin and Erickson, 1981; Bridge and Blackman, 1978; Cogan, 1979).

A recent National Institute of Education (NIE) study of parent choice based on individual household data collected through a national telephone survey of 1200 households found that better-educated and higher-income households appeared to be more active choosers (Williams, Hancher, and Hutner, 1983). Parents who themselves attended only private schools tended to have considered schools in their choice of residential location and to have actively searched for alternatives more often than other parents.

Current School Choice

Previous studies have found that parents who choose private schools tend disproportionately to be white, to have higher incomes, to live in metropolitan areas, and to reside in the Northeast or North Central regions of the country. They also tend to have attended private schools themselves (Kamin and Erickson, 1981; Williams, Hancher and Hutner, 1983). Gemello and Osman (1984), using data on unified school districts in California and census tracts within the San Francisco Bay Area, found that income, taste-related variables (measured by education and type of occupation), and racial/ethnic composition of the district or tract all appeared to have significant effects on private school attendance.

Kamin and Erickson (1981) and Cogan (1979) found that public school parents cited convenience as the predominating factor influencing choice. Bridge and Blackman (1978) found that location was the most significant single variable affecting choice among public school alternatives. Religion, academic factors, and discipline were more often cited by private school parents (Kamin and Erickson, 1981). Williams, Hancher, and Hutner (1983) found that parents tended to choose church-related schools because of their religious preferences and independent schools because of academic factors. While the cost of private schools was cited as a major factor inhibiting such choice for public school parents, it was not a major consideration for private school parents.

Transfers from public to private schools tend to be triggered by parent dissatisfaction, and transfers from private to public schools tend to be triggered by cost and convenience factors. Edwards and Richardson (1981) found that changes in schools are most frequent at natural transition points (grades 1, 7, and 9). This suggests that active search behavior is more a periodic than a continuous process and that the nature of the search or change may be related to the child's grade level.

Effect of Tuition Tax Subsidy on Schooling Choice

Two major types of studies have attempted to examine the effects of a tax subsidy on school choice and enrollments: studies that have used current private school enrollment to estimate the effects of tax subsidies, and studies that have tried to estimate the extent to which such subsidies would induce shifts in enrollment.

Studies using current enrollment data have focused mainly on costs to the federal government and the distribution of benefits to various segments of the population, with generally consistent findings. As

stated above, private school parents tend to be upper-income, white, and from the Northeast and North Central regions. Thus, these are the types of households that would benefit from tuition tax credits, assuming no major shifts in enrollment patterns as a result of the credit. This assessment, however, must be adjusted to take into account the fact that elementary schools in the South and West have dramatically higher tuition levels than those in other regions, and high schools have higher tuition levels than elementary schools in all regions. Furthermore, blacks tend to pay higher tuitions than whites, on average. The pattern of benefit distributions becomes even more complicated when one considers the fact that households with different tax liabilities will differ in their ability to take advantage of tuition tax credits (Jacobs, 1980; Augenblick and McGuire, 1982).

Studies of the second type attempt to estimate enrollment shifts to private schools due to tuition tax credits. These studies have been necessarily speculative because data about school choice in the presence of a subsidy have not been available. Coleman et al. (1981) make some broad generalizations based on modest data to claim that tuition tax credits would have salutary effects on the education of children from poor and minority families by encouraging greater participation in the private sector, which they claim provides better education. Catterall and Levin (1982) dispute these findings by pointing out that (1) the totals of poor and minority children shifting to private schools would amount to only .1 percent of these children in public schools, (2) the cost of such a policy would be exorbitant, and (3) the analysis of Coleman et al. is incorrect due to the income framework chosen by the authors. A tax credit would act as a change in price, not directly as an increase in income. Catterall and Levin further conclude that poor families are constrained from participating in a tuition tax credit program because of their general inability to meet the cash requirements of enrollment and the uncovered portion of the expenses, as well as the outright ineligibility of families with no tax liability. Additionally, a supply response by private schools may well be to raise tuition, thus further reducing the ability of low-income households to participate in the private sector.

Gemello and Osman (1982) found that religious preference and family income were the most significant factors in the choice of nonpublic school education. Income elasticity was estimated as being between 0.54 and 0.95. They concluded that public policies that increase family income through tax cuts or educational vouchers would increase nonpublic school attendance rates by about .67 percent for every 1 percent increase in family income.

Noell and Myers (1982) used the October 1979 Current Population Survey estimates of family income, private school enrollment, and private school tuition costs to estimate income elasticity of roughly the same proportions as the Gemello and Osman study. They reported a price elasticity of −0.42 for parochial schools (higher for low-income than high-income families) and approximately zero for nonparochial schools. They concluded that tuition tax credits, if unaccompanied by any corresponding rise in tuition, would cause small shifts to church-related schools.

Williams, Hancher, and Hutner (1983) report similar findings. Their survey also found that low-income and minority-group respondents expressed the greatest interest in using tuition tax credits to subsidize a shift to private schooling, particularly at the lowest credit levels.

MINNESOTA PARENTS' SCHOOLING CHOICES

To address the question of what influence a tuition subsidy has on school choice relative to other factors, we have modeled parents' school decisions using data on parents' actual use of the Minnesota tax deduction along with data about other factors influencing their choice-making behavior.

Description of the Sample

The analysis is based on a telephone survey of 476 Minnesota parents of public and private school children conducted during the summer of 1984. The sampling area, seven counties surrounding and including the Minneapolis-St. Paul SMSA, includes 48 percent of all school-age children in the state and 58 percent of the state's nonpublic school children. The region includes urban, suburban, and rural communities. A random-digit-dial telephone sample of parents was supplemented with a choice-based sample of private school parents residing within the Minneapolis school district.[1] The final combined sample consists of 339 parents of public school children and 137 parents of nonpublic school children.[2]

[1]The choice-based sampling approach samples the population conditional on the choices it has made; it thus ensures that sufficient observations are obtained for each choice to allow empirical analyses of choice. It has the advantage of being able to generate a suitably large sample at less cost than purely random sampling.

[2]The sample was limited to parents of children in grades K-12 whose schooling choices for the current school year were already made. Although we might have sampled parents of preschool children to ascertain their sensitivity to the tax deduction and other

Because the respondent group includes a choice-based sample, the proportion of survey parents sending their children to private schools is much larger than either the national average or Minnesota's state average (28.7 percent as compared to about 10 percent). Table 4.1 presents an economic and demographic profile of the survey sample, along with similar statistics on the general U.S. family population. It is important to note that the two groups are not strictly comparable. The Minnesota sample is limited to households of families with school-aged children. The U.S. population data include all families and, in the case of residential location, households. The education data for the general U.S. population include all persons aged 25 to 44.

Although the sample is fairly representative of Minnesota's population (the proportion of urban households is higher than in the rest of the state), our analytic results cannot be generalized to the rest of the nation. The Minnesota sample is predominantly white, fairly affluent, largely Protestant (but with a substantial proportion of Catholics), married and living with spouses, predominantly suburban, and highly educated. The sample, when compared with the U.S. population, significantly underrepresents minorities (especially black families), low-income families, and rural households. The Minnesota respondents also appear to have much more education than the national population. However, our analysis is applicable to particular subgroups and does provide information about the differential behavior of these subpopulations.

In the survey, households were asked about factors influencing their current school choice, knowledge and use of the tax deduction, and propensities to switch to different schools if higher deduction levels were offered (public school parents). The responses form a data base that allows us to model choice behavior and to examine switching behavior, which could prove important if deduction levels were raised (as indeed they were subsequent to this survey) and if schools responded by raising their tuition.

Choice-Making Behavior

It has generally been assumed that private school parents make more active choices than public school parents about where they want their children to attend school. In the Minnesota sample, however, public school parents were actually more likely to be "active choosers" than private school parents. We defined search behavior to include

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factors *prior* to making a choice, we would have had no way of determining whether in fact their actual (later) choices conformed with their expected plans.

Table 4.1

SELECTED SAMPLE CHARACTERISTICS

Characteristic	Survey Respondents[a]		U.S. Families[b] (percent)
	Number	Percent	
Race			
White	436	91.6	87.3
Black	12	2.5	10.5
Native American	12	2.5	—
Other	11	2.3	2.2
Income[c]			
< $15,000	61	12.8	29.0
$15,000–24,999	99	20.8	24.4
$25,000–49,999	210	44.1	35.5
$50,000+	86	18.1	10.9
Religious affiliation			
Protestant	230	48.3	(d)
Catholic	191	40.1	(d)
Other	18	3.8	(d)
None	28	5.9	(d)
Marital status			
Married, living with spouse	388	81.7	80.5
Not married	84	17.7	19.5
Residential location[e]			
Urban	182	38.2	29.5
Suburban/medium city	249	52.3	38.6
Small city/rural	43	9.0	31.9
Respondent's education[f]			
Less than high school	21	4.4	16.6
High school degree	180	37.9	40.9
Some college	132	27.8	19.5
College degree	139	29.3	23.0

[a]Total number of survey respondents was 476. Where percentages do not total to 100, remainder reflects respondents who did not answer specific question.

[b]Population data are drawn from U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States, 1984* (104th edition). All data are for families from the 1980 population census, unless otherwise noted.

[c]National family income data are for 1982.

[d]No comparable data available.

[e]U.S. population figures are for households. Urban and suburban represent metropolitan area "in central city" and "outside central city," respectively.

[f]U.S. population data are for persons aged 25 to 44 years in 1982.

consideration of other schools at the time of the current schooling choice and consideration of public schools in the residential location decision. We found that 62 percent of the public school parents reported being "active choosers," as compared with only 53 percent of the private school parents (Table 4.2). Although public school parents were less likely than private school parents to have considered other schools at the time of current school choice, most of them had considered the quality of local public schools as an important factor in determining residential location.

Table 4.3 presents a profile of active public and private school choosers, active home choosers, and nonchoosers. The first two categories are not mutually exclusive. Consideration of public school quality in residential choice is directly related to mother's education level and, in the case of public school parents, to income as well. However, search behavior at the time of current school enrollment is not clearly related to either income or parents' education levels. In general, nonactive choosers appear to be disproportionately lower-income households, although the income relationship is more clear-cut in the case of public school parents. Nonchoosing behavior is inversely related to parents' (especially mother's) education level among public school parents and to the attainment of college degrees among private school parents. Those least likely to exhibit either type of choice-making behavior were residents of rural areas and parents who themselves had attended only private schools. Among private school parents, Catholics were most likely to exhibit nonchoosing behavior.

The relationship between search behavior and socioeconomic variables is complicated by the fact that local school quality, socioeconomic status, and knowledge or taste for alternatives may be jointly distributed. Active consideration of alternatives probably depends on "push"

Table 4.2

EXTENT OF SEARCH, BY CURRENT SCHOOL CHOICE

(In percent)

Items Considered	Public School Parents (N = 339)	Private School Parents (N = 137)
Other schools	25.7	34.3
Public schools in residential choice	53.1	35.0
Neither	37.8	46.7

Table 4.3

CONSIDERATION OF SCHOOLING ALTERNATIVES, BY CURRENT SCHOOL CHOICE

(Percent of respondents)

Respondent Characteristics	Public School Parents Considering				Private School Parents Considering			
	Other Schools	Public School in Residence Choice	Neither	Number	Other Schools	Public School in Residence Choice	Neither	Number
All respondents	25.7	53.1	37.8	339	34.3	35.0	46.7	137
Income								
Less than $15,000	29.6	40.9	45.4	44	35.3	23.5	52.9	17
$15,000–25,000	34.2	53.9	35.5	76	21.7	8.7	73.9	23
$25,000–50,000	19.3	54.3	39.3	140	34.3	37.1	44.3	70
$50,000+	28.6	58.7	31.7	63	43.5	60.9	21.7	23
Mother's education								
Non-high school graduate	26.9	30.8	53.8	25	33.3	16.7	50.0	(6
High school graduate	19.7	46.9	45.6	147	30.8	26.9	51.9	52
Some college	34.1	52.7	33.0	91	21.5	39.5	52.6	38
College graduate	26.3	72.4	23.7	76	51.2	43.9	34.1	41
Father's education								
Non-high school graduate	32.5	47.5	40.0	79	33.3	25.0	50.0	24
High school graduate	20.0	43.3	46.7	90	31.0	37.9	44.8	29
Some college	26.1	49.3	39.1	69	22.2	18.5	63.0	27
College graduate	24.7	68.3	27.7	101	42.1	45.6	38.6	57
Mother's schooling								
Public school only	24.4	55.0	37.1	229	33.3	42.4	42.4	66
Private school only	34.3	45.7	42.9	35	40.0	23.3	53.3	30
Both public and private schools	27.9	55.7	32.8	61	30.8	33.3	48.7	39
Religion								
Protestant	27.4	60.3	31.8	179	33.3	41.2	41.2	51
Catholic	24.8	47.0	42.7	117	29.7	31.1	52.7	74
All others	25.0	44.4	41.7	36	80.0	40.0	20.0	10
Residential location								
Urban	40.6	58.3	29.2	96	36.1	32.6	48.5	66
Suburban/medium city	19.7	53.7	37.9	203	32.6	41.3	45.7	46
Small city/rural	20.0	37.5	57.5	40	20.0	20.0	60.0	5

and "pull" factors, along with ability to pay. "Push" factors might consist of having low-quality neighborhood schools (an encouragement to seek other options), while "pull" factors might be the attraction of good alternatives and subsidies like tax deductions, free transportation, or scholarship support.

In general, active consideration of alternatives increases with income because higher-income parents have more options available to them at each stage of the search process: they can purchase high-priced homes in "good" school districts, and they can purchase private education. The greater propensity of lower-income public school parents to actively consider other schools at the time of school enrollment may be the result of "push" factors if the public schools in their neighborhoods are relatively poor. Parents in the $15,000–$25,000 annual income group who have chosen private schools give less consideration to other options than do those in other groups, perhaps because they do not consider the public schools in their neighborhoods as viable alternatives. Public school parents in the $25,000–$50,000 income range are less likely than others to consider other schools at the time of enrollment (although they consider public schools in their residential choice), perhaps because they feel that good public schools are available.

Active school choosers were much more likely than nonactive choosers to stress school quality factors as being most important in determining their current school choices (Table 4.4). Nonactive choosers tended to cite situational and convenience factors and moral/religious instruction far more frequently than active choosers. Active choosers who considered more than one school at the time of enrollment cited the quality of teaching staff, discipline, academic standards, and individual attention as very important factors in their choice of schools. Public school parents were far more likely to cite the courses offered by the school and parent involvement as very important factors, while private school choosers were more likely than their active public school counterparts to stress moral values and religious instruction (Table 4.5).

Overall, there appears to be a modest relationship between income and parents' educational levels and the propensity to actively seek out school options. Higher income and education definitely increase the likelihood that parents considered public school quality in their residential choice, but these factors have a much less clear-cut relationship to whether parents considered more than one school at the time of enrollment. Given the possibility that household income and public school quality may be jointly distributed, it is not entirely surprising that lower-income parents—who cannot afford to buy homes in the higher-priced neighborhoods—are most active in considering school

Table 4.4

MOST IMPORTANT REASONS FOR CURRENT SCHOOL CHOICE

(Percent of responses)

	Active School Choosers			Non-Active School Choosers		
Reasons	Public	Private	Total	Public	Private	Total
Financial factors	11.5	0.0	7.5	20.3	0.0	15.1
Convenience/proximity of school	5.8	0.0	3.8	21.4	3.2	16.7
Situational circumstances	0.0	0.0	0.0	26.6	3.2	20.6
Belief/support of education type	0.0	0.0	0.0	1.3	3.2	1.8
Quality of school/ education/program	59.8	43.5	54.1	21.4	35.7	25.1
Moral/religious factors	0.0	17.4	6.0	0.0	30.1	7.7
Disciplinary standards	1.2	15.2	6.0	0.5	13.5	3.9
Student composition	3.4	2.2	3.0	0.8	0.0	0.6
Family factors	5.7	4.3	5.3	7.4	11.1	8.3
Other	12.6	17.4	14.3	0.3	0.0	0.2
Number[a]	87	46	133	365	126	491

[a]Total number of responses, not number of respondents. Although asked for the most important reason for current school choice, respondents frequently cited two or more factors. Therefore, we have included all responses rather than introduce bias by arbitrarily selecting one.

options at the time of enrollment. More affluent parents apparently tend to move to locations where public schools better meet their expectations.

Surprisingly, nearly half (47 percent) of the private school parents in our survey did not actively consider school alternatives in either residential choice or school selection. The assumption that parents select a private school because they have compared schools and found the private school to be the most "competitive" option is open to question. Like the many public school parents who automatically send their child to the nearest public school, a large number of private school parents—especially those who attended private schools themselves—seem to "automatically" send their child to a particular private school.

Public and private school choosers share a common concern for academic quality in making their decisions, but they weight other factors—location, costs, and type of educational program—differently. We next examine the determinants of public/private school choice in more detail.

Table 4.5

FACTORS CITED BY ACTIVE SEARCHERS AS VERY IMPORTANT IN INFLUENCING CURRENT SCHOOL CHOICE

(Percent of respondents)

Factor	Public School Parents (N = 86)	Private School Parents (N = 47)
Teaching staff	87.2	85.1
Discipline in school	80.2	74.5
Academic standards	77.9	80.9
Courses offered	75.6	48.9
Individual attention	72.1	76.6
Parent involvement	60.5	46.8
Moral values	51.2	63.8
Size of school	47.7	40.4
Financial costs	43.5	17.0
Location of school	43.0	23.4
Child's desire to attend	43.0	38.3
Socioeconomic background of students	27.9	21.3
Desegregation policy/student body composition	21.2	17.0
Religious instruction	14.1	40.4

Current School Choice

We examined several variables to determine the direction and significance of their effects on current school choice. Table 4.6 illustrates these bivariate relationships.

We used the chi-square (χ^2) test to examine the significance of the observed differences in the distribution of the variables across schooling choices. The null hypothesis was one of no difference between public school and private school parents across any of the selected variables. Somewhat surprisingly, we cannot reject the null hypothesis for race, income, level of education, or active search behavior; schooling choices appear to be independent of these variables. Household characteristics significantly related to the choice of private schooling include religion, parents' own attendance at private schools, number of school-aged children, two-parent households, and child's grade level. Urban households in our sample were also much more highly represented in private schools. However, we draw no inferences from this distribution because our choice-based sample of private school parents was drawn entirely from the urban area.

Table 4.6

DEMOGRAPHIC CHARACTERISTICS AND CURRENT SCHOOL CHOICE

(Percent within subgroup of households)

Variable	Public Schools	Private Schools	Number	χ^2
All respondents	71.3	28.7	476	
Family income				
Less than $15,000	72.1	27.9	61	5.11
$15,000–25,000	76.8	23.2	99	
$25,000–50,000	66.7	33.3	210	
$50,000+	73.3	26.7	86	
Race				
White	71.1	28.9	436	3.74
Nonwhite	68.6	31.4	35	
Religion				
Protestant	77.8	22.2	230	18.67*
Catholic	61.3	38.7	191	
All others	78.3	21.7	46	
No. of school-aged children				
1	74.0	26.0	196	16.42*
2	72.9	27.1	181	
3+	62.6	37.4	99	
Marital status				
Married	70.1	29.9	388	11.15*
Not married	75.0	25.0	84	
Grade				
Elementary	66.1	33.9	218	5.35*
Secondary	75.7	24.3	259	
School search behavior				
Did not consider other schools	73.8	26.2	343	3.67
Considered other schools	64.9	35.1	134	
Mother's education				
Non-high school graduate	76.5	23.5	17	9.17
High school graduate	73.9	26.1	199	
Some college	70.5	29.5	129	
College graduate	64.3	35.7	115	
Mother's schooling				
Public school only	77.6	22.4	295	27.38*
Private school only	53.8	46.2	65	
Public and private school	51.0	39.0	100	
Father's education				
Non-high school graduate	82.1	17.9	28	13.54
High school graduate	75.6	24.4	119	
Some college	71.9	28.1	96	
College graduate	64.1	35.9	156	
Father's schooling				
Public school only	76.2	23.8	273	19.01*
Private school only	51.0	49.0	49	
Public and private school	62.3	37.7	77	
Residential location				
Urban	52.7	47.3	182	52.92*
Suburban/medium city	81.5	18.5	249	
Small city/rural	88.4	11.6	43	

*Chi-square is greater than $\chi^2_{.05}$ with the appropriate degrees of freedom.

Most of the significant variables display the expected relationships to school choice: Catholics have a much higher propensity to enroll in private schools, as do households with larger numbers of school-aged children. This latter finding may be surprising until one considers that these households tend to be predominantly Catholic and that tuition reductions are frequently offered for children from the same family. Parents who have private school backgrounds obviously have a strong tendency to choose private schools for their children.

Two-parent households and households with children in elementary schools have a much higher propensity to choose private schools. Two-parent households may have more time to devote to the search for school alternatives as well as greater ability to pay for private schools. Single-parent households are generally female-headed, and their average earnings are less than those of two-parent households. The greater enrollment of elementary students in private schools may be partly a result of greater availability (there are more than twice as many elementary as secondary private schools in the sampling area, as well as in the entire state) and partly the result of lower costs for private school education at the elementary level. Additionally, parents of elementary school children may feel that individual attention or religious education are more important at this age.

It is somewhat surprising that we found no significant relationship between race and schooling choice. However, this may be partly because our choice-based sample of private school parents is heavily urban, which increases the probability of sampling minority parents who have chosen private schools. Furthermore, there is little variation in the racial status of the sample households—over 92 percent of the households are white. Thus, we cannot make sweeping generalizations about the meaning of this finding.

Although income was not significantly related to school choice in this bivariate test, it exhibits an interesting pattern which we explore further in subsequent analyses. Middle-income ($25,000–$50,000) families appear to have markedly higher propensities than others to choose private schools. Higher-income families presumably live in areas with the best public schools; lower-income families may be restricted in their ability to pay for private schooling. However, parents in the lowest income group (family income less than $15,000) were more likely to choose private schools than those in the lower middle or high income ranges. This runs somewhat counter to the NIE survey and other studies, which have found fairly direct relationships between private school enrollment and income. As with active search behavior, we suspect this pattern reflects the combination of "push" and "pull" factors facing different types of parents, and the tradeoff between

obtaining the desired quality of schooling through residential location decisions or tuition payments.

Reasons for School Choice

Factors influencing current school choice differed across public and private school parents (Table 4.7). Public school parents most frequently cited school quality factors (29 percent), situational circumstances (21 percent), financial factors (19 percent), and convenience or proximity of the school (18 percent). Private school parents most often cited school quality factors (38 percent), moral and religious instruction (27 percent), and school discipline standards (14 percent). These mirror the results of the NIE survey.

The costs of nonpublic schooling were cited by 29 percent of public school parents as a reason for not considering other school alternatives, and by 42 percent of the much smaller number (77) who had considered a private school but decided against it. Of the 42 parents who had transferred children from private to public schools, only 17 percent cited cost as the reason for the switch. Conversely, the 55 households that had switched from public to nonpublic schools cited the quality of education, the presence of religious instruction, and disciplinary standards most frequently as the reason for the switch. This almost exactly parallels the NIE survey findings, where these same factors were given as reasons in almost all transfers to private schools.

Table 4.7

FACTORS CITED AS BEING IMPORTANT IN INFLUENCING CURRENT SCHOOL CHOICE

(Percent of total responses)

Factor	Public School Parents	Private School Parents
Financial costs	18.6	0.0
Quality of school/education	28.8	37.8
Moral/religious factors	0.0	26.7
Disciplinary standards	0.7	14.0
Situational circumstances (assignment)	21.5	2.3
Convenience/proximity of school	18.4	2.3
Belief/support of educational system	1.1	2.3
Student body composition	1.3	0.6
Personal/family factors	7.1	9.3
Other	2.6	4.7

Like the NIE survey respondents, most of our households tended to be quite satisfied with their current school. However, 10.6 percent of public school parents reported being somewhat or very dissatisfied, whereas only 3.7 percent of private school parents were dissatisfied. The active school choosers were more likely to be dissatisfied (13.5 percent), possibly because such parents tend to be more involved with schooling and less inclined to passively accept whatever the school has to offer.

Public school parents were far more likely to cite the quality of the school or education as the most important reason for their dissatisfaction, while private school parents complained of disciplinary standards as well.

Multivariate Models of Current School Choice

In modeling school choice, we start with the assumption that households are utility maximizers. Each household selects among the given discrete alternatives (in this case, private school or public school) based upon a choice index, which is a function of the measurable attributes of both the decisionmaker and the alternatives, and a random component reflecting unobserved or unmeasured factors and consumer idiosyncracies. The decisionmaker chooses the alternative that maximizes utility; the probability of choosing a particular alternative can, under certain assumptions, be estimated using a logit or probit specification. These are more appropriate choices for the functional form than the linear probability model, since they restrict the value of the dependent variable to between 0 and 1.

Empirically, the choice variable (Y_i) is defined as 0 if individual i chose a public school and 1 if individual i chose a private school. The model relates the current school choice of the i^{th} individual to a vector of characteristics for the individual and perceived attributes of the alternatives. The assumed relationship is

$$Y_i = P(x_i) + \epsilon$$

where

$$P(x_1) = \frac{1}{1 + exp[\,-(a + \sum_{k}^{j-1} b_j x_{ij})]}$$

and $P(x_i)$ = the probability of choosing a private school for a specific household i
x_i = the vector of characteristics of the household i
k = the number of characteristics measured for household i
$a, b_i, \ldots, b_k$ = parameters of the model to be estimated

We postulated several different versions of the school choice model incorporating somewhat different sets of regressors. The basic model incorporates strictly economic variables. According to our theory, both income and price of schooling should have important effects on choice of current school. While we had data on income for all households, the price variable (tuition paid) was, of course, available only for private school parents. Tuition varied considerably by type of school and by grade of child, with the largest difference being between tuitions charged by Catholic schools and those charged by other schools, and between those for elementary schools and those for secondary schools. Of the 74 Catholic parents in our private school sample, 73 sent their children to Catholic schools. The rest of the private school parents were distributed across a variety of schools, as shown in Table 4.8.

Table 4.8

DISTRIBUTION OF PRIVATE SCHOOL PARENTS, BY RELIGION AND TYPE OF SCHOOL CHOSEN

(Percent)

Religious Affiliation	Catholic School	Lutheran School	Baptist School	Other Religious School	Nonsectarian School	Number
Catholic	98.7	1.3	0	0	0	74
Protestant	15.7	25.5	21.6	17.6	19.6	51
Other	20.0	0	20.0	20.0	40.0	5
None/don't know	57.2	0	0	28.6	14.2	7

The price variable for our public school parents was created as follows:

1. Catholic parents would probably choose Catholic schools; therefore, the price facing them was imputed as the average tuition faced by all Catholic parents in the sample ($431 for elementary school, $931 for secondary school).
2. For all other public school parents, we had no basis for predicting which type of school would have been chosen, so we used the average tuition paid by all non-Catholic parents ($1096 for elementary school, $1506 for secondary school).

These prices are admittedly only proxies for the actual prices perceived by public school parents and may ignore many other important factors. For example, Catholic parents who choose public schools may be less likely to value religious instruction than those who have already chosen Catholic schools. Other "taste" factors may also influence the perceived price of alternatives.

Other versions of the model incorporate variables to capture other dimensions of the price variable, the most important being whether the household had considered quality of public schools as an important factor in their residential location decision. Households that pay more for housing in order to attend particular public schools incur a price for their school choice. Whether the household considered the availability of religious instruction or religious training important was included to capture a pure "taste" effect. The final variable, whether locational factors were important in the school choice decision, is included to capture two effects: Households who consider location important may be those who face other costs (e.g., costs of time or transportation), in which case the tuition variable underestimates the true cost of private schooling for them. Alternatively, it may capture an attitudinal variable, that is, a desire for the child to go to a neighborhood school attended by the neighborhood children.

A number of the other variables that were found to be significant in the bivariate relationships appeared to be collinear with either income or price (as constructed), or did not add significantly to the explanatory power of the model.

The parameters of the model were estimated using the discriminant function method. The coefficients were derived by rescaling the least-squares coefficients relating Y and x. These estimates have been shown to satisfy the conditional logit functional form given above (Chow and Polich, 1980; Haggstrom, 1983; Halperin, Blackwelder, and Vorter, 1971).

The estimation procedure is modified to correct for the fact that the sample of households in the data base was partially formed on the basis of choice, the result of combining the random-digit-dial and the choice-based samples. Manski and Lerman (1977) and Hosek (1979) have shown that unweighted parameter estimates of the conditional logit model derived from choice-based sample data are consistent except for the intercept, which can be adjusted *ex post* by adding $1n\ k_1/k_0$ to its estimate, where

$$k_0 = \frac{\textit{Share of the population choosing outcome } 0}{\textit{Share of the sample choosing } 0}$$

and

$$k_1 = \frac{\textit{Share of the population choosing outcome 1}}{\textit{Share of the sample choosing 1}}$$

The constant term reported in Table 4.9 and later in Table 4.11 is adjusted using this weight.

The basic economic model performs well and lends some credence to our hypothesized relationships. Households with $25,000–$50,000 incomes have significantly higher propensities to choose private schools than the $15,000–$25,000 income group; both low- and higher-income households have slightly higher propensities to choose private schools, although neither variable is significant. Price has the expected negative effect on choice of private schools and is strongly significant.

The effect of the other variables is as hypothesized earlier: Households who considered public school quality in choosing their place of residence have significantly lower propensities to choose private

Table 4.9

ESTIMATION RESULTS: MODELS OF CURRENT SCHOOL CHOICE

Independent Variable	Model I	Model II	Model III	Model IV	Model V	Model VI
Constant	−1.97	−1.77	−3.15	−1.80	−2.95	−2.70
Family income						
< $15,000	0.16	0.12	0.30	0.14	0.26	0.26
	(0.43)	(0.33)	(0.73)	(0.40)	(0.63)	(0.61)
$25,000–50,000	0.59	0.64	0.80	0.55	0.85	0.75
	(2.27)*	(2.42)*	(2.72)*	(2.08)*	(2.86)*	(2.43)*
> $50,000	0.50	0.59	0.90	0.43	0.99	0.84
	(1.53)	(1.76)	(2.43)*	(1.29)	(2.64)*	(2.15)*
Price	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001
	(3.14)*	(2.72)*	(2.66)*	(2.98)*	(2.28)*	(1.82)
Considered public schools in choosing residence		−0.69	—	—	−0.72	−0.66
		(3.18)*			(2.96)*	(2.61)*
Religious/moral instruction important			3.15	—	3.16	3.90
			(10.95)*		(10.86)*	(12.42)*
Location of school important				−0.48		−1.56
				(2.20)*		(5.78)*

NOTE: t-statistics are in parentheses.
*Significant at .05 level.

schools, and this variable does capture some of the effect of the price variable. Households who consider religion important are much more likely to choose private schools. When this variable is added, the high-income variable also becomes significant, suggesting that income is a more powerful explanatory variable when taste for religious instruction is controlled. Those who consider location important are significantly less likely to choose private schools. When all three of these variables are added, the price variable becomes insignificant, suggesting that location decisions, convenience costs (or tastes for neighborhood schooling), and tastes for religious instruction largely represent the school prices faced by households of different types.

MODELS OF SWITCHING BEHAVIOR

Discussions about the implementation of a tuition tax subsidy inevitably focus on who would benefit and who might be induced to change schools as a result of the policy. Nearly three-fifths of all the respondents in the NIE survey indicated that they would be unlikely to change their child's school placement at any of three proposed levels of tuition tax credit ($250, $500, and all tuition costs). Among public school parents, lower-income nonwhite households tended to express the greatest interest in switching schools even under the lowest level of credit, as did households who were dissatisfied with the current school or who had mentioned cost as a factor in current choice. About one-fourth of the private school parents indicated that they might transfer their child if all tuition were credited, generally to another school of the same type the child was currently attending.

We address switching behavior in two ways: We examine first the propensity of public school parents to switch to private schools if offered increased levels of income tax deduction, and second, the propensity of private school parents to switch schools if tuition costs at the current school were increased by specified amounts. In both cases, we are interested in identifying those parents who are "on the margin" of choosing between public and private schools and in determining how they might respond to possible changes in price.

Switching Behavior of Public School Parents

Public school parents were asked how likely they would be to transfer to private schools if they were offered (1) a deduction of $500 for elementary school children and $700 for secondary school children (*the then-current deduction*) or (2) an increased deduction level of $850 for elementary school children and $1200 for secondary school children.

Surprisingly, 23 percent reported that they were "very likely" or "somewhat likely" to transfer to private schools if they were offered a deduction *at the then-current level* (Table 4.10). Since that level of deduction was already available and had been for many years, we must assume that these parents did not know about the deduction or did not understand how the deduction operates. At the higher levels of tax deduction then being proposed in the state legislature ($850 and $1,200),[3] the proportion of parents saying they would be likely to switch to private schools increased to 30 percent. More than 50 percent said they would be *very* unlikely to transfer at either level.

Reports of possible future behavior based on a policy whose actual benefits and operation may be poorly understood by respondents must obviously be viewed with some skepticism. However, these answers suggest which types of respondents have a desire to switch to private schools. In an attempt to identify the parents at the choice margin, we modeled the propensity to switch, based on the answers to the question referring to the higher level of deduction. The dependent variable is again a dichotomous choice variable: 0 if the household reported that it would be unlikely to transfer to a private school even given the increased deduction, 1 otherwise. The estimation results are shown in Table 4.11.

The model is dominated by three variables: parents who are dissatisfied with the current school are most likely to say they would

Table 4.10

LIKELIHOOD OF TRANSFERRING TO PRIVATE SCHOOL, BY LEVEL OF INCOME TAX DEDUCTION

(Percent of public school parents)

	Deduction Level	
Likelihood	$500/$700[a]	$850/$1,200[a]
Very likely	9.4	16.4
Somewhat likely	13.6	13.3
Somewhat unlikely	13.9	13.3
Very unlikely	59.7	53.6
Don't know	3.3	3.3
Total	100.00	100.00

[a]Maximum deduction for elementary and secondary school, respectively.

[3]These are somewhat higher than the levels that were later enacted.

Table 4.11

ESTIMATION RESULTS: MODEL OF PROPENSITY TO TRANSFER TO PRIVATE SCHOOL

Independent Variable	Coefficient
Constant	−1.33
Family income	
< $15,000	0.53
	(1.22)
$25,000–50,000	0.16
	(0.49)
> $50,000	−0.70
	(1.77)*
Price	−0.0001
	(0.35)
Considered public schools in choosing residence	0.29
	(1.11)
Location of school important	0.93
	(3.45)*
Dissatisfied with current school	1.61
	(3.84)*
Level of knowledge of tax deduction	−0.02
	(2.18)*

NOTE: t-statistics in parentheses.
*Significant at .05 level.

switch if given a larger deduction, as are households for whom location is important in the choice of school. We introduced a knowledge index to control for the actual level of knowledge characterizing each household. Our hypothesis was that households who understood the ramifications and the actual workings of the tax deduction (as opposed to say, a tax credit) would be much less likely to transfer. The index was simply an additive one where responses to a series of nine questions relating to the tax deduction were used to score the respondent's knowledge level, with the respondent being given one point for every correct answer. The index is strongly and negatively related to the propensity to transfer.

High-income public school parents appear significantly less likely than others to transfer to private schools, probably because they are satisfied with the higher quality of public schools in their neighborhoods. Conversely, low-income households are more likely than middle-income households to say they would transfer, although the variable does not reach the level of significance.

Switching Behavior of Private School Parents

It is also important to know how sensitive private school parents are to school price to identify parents at the choice margin. If nonpublic schools raised tuition levels in response to tuition tax subsidies, it is conceivable that some parents would actually find it harder to pay for private schooling. We asked private school parents about their current tuition levels and then asked them about the likelihood of transferring to another school if annual tuition costs were raised by specific amounts ($200, $500, $1000).

Table 4.12 shows that tuition costs vary significantly by type of school, with Catholic schools being by far the least expensive. Almost 60 percent of those attending Catholic schools have an annual tuition of less than $500. Catholic school tuition tends to be lower because most of the schools are heavily subsidized by the parish, and most of them also set lower tuition levels for parishioners.

Table 4.12

TUITION COSTS, BY HOUSEHOLD CHARACTERISTICS

(Percent in tuition range)

	Annual Tuition ($)				
Characteristic	0–499	500–999	1000–1999	2000+	Number
Type of school					
Catholic	58.3	23.8	14.3	3.6	84
Other religious	18.4	34.2	31.6	15.8	38
Independent	10.0	0.0	20.0	70.0	10
Income					
Less than $15,000	33.3	53.3	13.3	0.0	15
15,000–25,000	56.5	21.7	17.4	4.4	23
25,000–50,000	49.3	29.0	17.4	4.3	69
$50,000+	16.7	0.0	33.3	50.0	24
Mother's schooling					
Public school only	31.8	22.7	22.7	22.7	66
Private school only	55.2	31.0	10.3	3.5	29
Both public and private schools	52.8	25.0	22.2	0.0	36
Religion					
Protestant	24.5	26.5	28.6	20.4	49
Catholic	58.3	23.6	16.7	1.4	72
All others	20.0	20.0	0.0	60.0	10

Amounts of tuition paid vary significantly by household income, the type of schooling received by the parents, and religious background; presumably, these factors significantly affect the type of school parents select for their children and thus the amount of tuition paid. High-income households are concentrated in the most expensive schools and middle-income households in the least expensive schools. Low-income households tend to pay tuitions in the low and moderate tuition ranges. Catholics and parents who previously attended private schools pay the lowest tuitions.

We asked private school parents how much of a financial burden it was to send their child to a nonpublic school. The answers, as one would expect, varied by school type and by family income (Table 4.13). Parents who had selected non-Catholic schools were much more likely to report that the burden of sending their child to nonpublic schools was heavy, as were parents from lower income households. About half of all parents, regardless of income, felt the burden was light. Low-income households were most likely to say the burden was "heavy" or "too much" (24 percent), but a surprisingly large proportion (17 percent) of the high-income group made the same claim. Of course, about half of these households faced tuition costs of $2000 or more per child.

The likelihood of transferring to other schools if tuition were increased is very dependent on the relative increase in tuition, as shown in Table 4.14. Small increases would lead only about 13 percent to consider switching, but 58 percent would consider switching if tuition costs were to increase by $1000, a level representing a 100 percent increase for the average household. Still, it is rather remarkable that

Table 4.13

FINANCIAL BURDEN OF SENDING CHILD TO NONPUBLIC SCHOOL, BY SELECTED CHARACTERISTICS

(Percentage of private school parents)

Category	Reported Burden			Number
	None/Light	Moderate	Heavy/Too Much	
All respondents	51.5	35.1	13.4	134
Type of school				
Catholic	56.0	33.3	10.7	84
Other religious	44.7	36.8	18.4	38
Independent	30.8	46.1	23.1	12
Family income				
Less than $15,000	41.2	35.3	23.5	17
$15,000–25,000	54.5	27.3	18.2	22
$25,000–50,000	52.8	38.6	8.6	70
$50,000+	54.2	29.2	16.7	24

Table 4.14

CUMULATIVE LIKELIHOOD OF TRANSFERRING FROM CURRENT PRIVATE SCHOOL, BY SELECTED TUITION INCREASE

	Increase in Tuition ($)		
Likelihood of Transfer	200	500	1000
Definitely yes	6.1	13.7	35.1
Probably yes	6.9	22.1	22.9
Probably no	19.8	27.5	19.1
Definitely no	63.4	29.8	14.5
Don't know	3.8	6.9	8.4
Number	131	131	131

more than 40 percent of these private school households said they would not switch even at such high levels of tuition.

Of those "definitely likely" or "probably likely" to transfer, Table 4.15 shows the types of schools to which these households would transfer their children. It seems evident that households who choose private education for reasons of "taste" would continue to look for alternatives within the private sector. Roughly half of the private school parents in our survey said they would transfer to public schools.

Modeling the propensity of private school parents to transfer, particularly to public schools, is useful for determining which households appear to have more elastic demands for private schools. However, we cannot infer from this exercise the joint effects of a tuition increase *and* an increase in the size of the tax deduction, as we cannot predict the net effect on price facing different households. Table 4.16 presents the estimation results of our model of parent propensity to transfer. The dependent variables were defined as follows:

(1) Propensity to transfer = { 1, if respondent was likely to transfer child to another school if tuition increased by $500; 0 otherwise.

(2) Propensity to transfer to public school = { 1, if respondent was likely to transfer child to public school if tuition increased by $500; 0 otherwise (includes those who would stay in present school or transfer to another private school).

Table 4.15

DIRECTION OF TRANSFER FROM CURRENT PRIVATE SCHOOL IF TUITION INCREASED, AMONG HOUSEHOLDS LIKELY TO TRANSFER

Transfer to	Percent of Total
Public school	51.3
Catholic school	18.4
Other religious	14.5
Independent	9.2
Don't know	6.6
Number	76

Table 4.16

PROPENSITY OF PRIVATE SCHOOL PARENTS TO TRANSFER TO OTHER SCHOOLS

(Coefficients)

	Likelihood of Transfer to	
Independent Variable	Another Private School	Public School
Constant	−0.23	−1.25
Family income		
< $15,000	0.57	−0.37
	(0.73)	(0.40)
$25,000–50,000	0.67	0.26
	(1.18)	(0.39)
< $50,000	0.85	0.39
	(1.08)	(0.42)
Mother attended private school	−0.42	0.17
	(0.98)	(0.34)
Considered public school in choosing residence	0.21	0.16
	(0.48)	(0.31)
Current tuition level	−0.001	−0.001
	(3.64)*	(2.23)*

NOTE: t-statistics in parentheses.
*Significant at .05 level.

The only variable shown to be of any importance in predicting switching behavior is the current tuition level. Households who pay low levels of tuition are much more likely to transfer to other private schools or to public schools in the face of increased tuition. This variable, of course, captures some of the effects of income, since the two are fairly highly correlated.

SUMMARY

Our examination of parent schooling choices in Minnesota suggests that parents seek out and "purchase" schooling options in at least two ways. High-income parents tend to seek high-quality public education in their residential location decisions, while low-income parents—who cannot afford to "choose with their feet"—are more likely to consider school alternatives at the time of enrollment.

Contrary to previous findings, race and income did not bear clear-cut linear relationships to either active choice behavior or propensity to choose private schools in our sample. Middle-income families (annual incomes of $25,000–$50,000) are most likely to choose private schools for their children. However, parents in the lowest income group (family income less than $15,000) were more likely to choose private schools than those in the lower-middle or upper income ranges. We suspect that this reflects the joint distribution of income and public school quality, and the combination of "push" and "pull" factors facing different types of households.

Also contrary to previous assumptions, private school parents are not more likely than public school parents to make active school choices. Nearly half of the private school parents in our sample (47 percent) did not consider school alternatives in either residential choice or school selection (as compared with 38 percent of public school parents). Many public school parents automatically send their child to the nearest public school, and likewise a large number of private school parents, especially Catholic parents and those who attended private school themselves, seem to "automatically" select a particular private school for their children.

Both public and private school parents who made active school choices cited academic quality as a major reason for their choice. However, public school parents were more likely to cite situational and convenience factors, while private school parents were more likely to cite moral and religious instruction. In modeling school choice decisions, we found that these "taste" variables are powerful predictors of school choice, as is the price for private schooling facing different households.

The consideration of public school quality in residential location decisions significantly reduces the propensity to choose private schools and captures some of the price effect. When schooling tastes are controlled (the importance of location and religious instruction in school choice), the significance of income as a predictor of private school choice greatly increases.

We examined the influence of the tax deduction on public school parents' propensity to switch to private schools by modeling their responses to the question of how likely they would be to switch to private school if given a tax deduction somewhat larger than that currently in effect. Those most likely to say they would transfer were parents dissatisfied with their child's current school (about 10 percent of public school parents) and those who had cited location as an important factor in their current school choice. High-income parents were least likely to say they would transfer, but no other income effects were significant.

Most parents who said they would transfer knew little about the operation of the tax deduction, as evidenced by the fact that more than 75 percent had also said they would transfer under the *then-current* levels of deduction. Importantly, parents who knew most about the operation of the tax deduction were significantly less likely than others to say they would transfer. Thus, the deduction does not appear to be a powerful tool for equalizing school choice-making ability.

We found that the primary predictor of private school parents transferring to public schools or other private schools is the current level of tuition paid: the lower the current tuition level, the more likely parents were to say they would transfer if tuition were increased. To the extent that the nonpublic school aids programs lower the tuitions parents must pay for a given level of service (as suggested in our nonpublic school survey), those programs would seem to encourage private school choice for the parents (primarily lower-income and Catholic) who choose low-tuition schools.

V. CONCLUSIONS

The findings of this study suggest that Minnesota's nonpublic school policies may in fact remove some of the obstacles to private school choice, by lowering costs and increasing access for those who might not otherwise be able to choose private schools. Contrary to what most other parent choice studies have found, in our Minnesota sample, neither income nor race is directly related in a linear fashion to the choice of private versus public schools. Furthermore, we did not find a clear-cut relationship between income or educational level of parents and the propensity to actively seek out schooling alternatives. Higher-income parents are more likely to choose their place of residence partly on the basis of local school quality, but low-income parents are equally likely to seek out school alternatives at the time of enrollment. Public school parents are even more active in making these two types of school choices than private school parents. Thus, school choice in this sample is a concern of all types of households. Indeed, school quality is the foremost reason cited by parents of both public and private school children for their current school choice.

However, the price of private school alternatives does influence choice, as do attitudinal variables, such as the importance of location and of religious instruction, and "taste" for private schooling, as reflected in the parents' own schooling. When price and tastes for different types of education are taken into account, income becomes more important in determining private school choice. Also, our survey indicates that many lower-income parents of private school children might switch them to public schools if their tuition costs increased.

At least two of Minnesota's nonpublic school aid policies appear to have important effects on private school costs and, indirectly, on the availability of private schooling to parents at the margin of private school choice. Nonpublic school administrators view the state's nonpublic school aids programs—providing textbooks, guidance counseling, testing, and health services—as important in keeping tuition costs low. If the aid programs were not available, most administrators believe they would have to increase tuition. This is particularly true of the low-tuition sectarian schools which serve most of the private school children from low- and moderate-income households.

The provision of free bus transportation to nonpublic schools also appears to affect parents' choice of private schools. Both nonpublic school administrators and private school parents perceive the

transportation subsidy as important in enabling students to attend their school of choice. This is particularly true for lower-income students in low-tuition schools, those most likely to be on the choice margin.

However, the tuition tax deduction, by itself, appears to have little or no effect on parental choice, while it disproportionately benefits parents with higher incomes and educational levels. Of the 60 percent of nonpublic school parents who had ever used the deduction, only one-third said it had any bearing on their choice of school. Fully 98 percent of these parents told us they would still have sent their children to private school if the deduction had not been available. Knowledge and use of the deduction are strongly related to parents' income. Low-income and minority households are significantly less likely to use the tax deduction than other households, while the largest number and size of claims accrue to upper-income parents with children in high-tuition schools. A very small proportion of public school parents (less than 15 percent) had ever claimed the deduction, and those who did claimed very small amounts.

We do not expect that the recent increase in the size of the deduction will influence more parents to transfer to private schools. Although 30 percent of the public school parents in our sample said they would be at least somewhat likely to transfer to private schools at the new deduction levels, most of them do not seem to understand how the deduction operates in terms of eligibility and actual monetary value. More than three-quarters of these parents (about 23 percent of all public school parents) had also said they would transfer at the *then-current* levels of the deduction. Obviously, since they had not transferred, they were either unaware of the deduction or ill-informed about how it operates. Those who knew the most about the deduction were least likely to say they would transfer, presumably because they realized what a small effect it actually has on price. Thus, we might expect that the increase in the deduction will cost the state more in forgone revenues as those with high tuitions can write off more of their expenses, but it will not significantly change the size or composition of the private school sector.

The relative unimportance of the tax deduction is not surprising, for at least two reasons. First, the actual value of the deduction is much smaller than its face value, since it is a deduction rather than a credit. Parents must assume direct, immediate costs for private schooling before they can recoup a small portion of those expenses through the deduction. And only those parents who itemize their tax returns can use the deduction at all. Thus, the deduction has virtually no effect on private school costs for low-income parents, since most of them cannot

use it, and those who can have low marginal tax rates. For other parents, the cost savings are at most about 15 percent of tuition costs. Second, while the costs of private schooling are a factor in school choice decisions, other factors, such as parents' own prior schooling experiences, concern for religious instruction, and logistical considerations, bear stronger relationships to school choices.

It is important to note that the costs and effects of a tax deduction for educational expenses are likely to differ significantly from those of a tax credit or a voucher. Obviously, the size of any of these types of subsidies would greatly influence both their costs to the government and the degree to which they lower private schooling costs to parents. As demonstrated in this report, a tax credit would be more costly (and more valuable to parents) than a tax deduction of the same size, since the latter is worth only the fraction of its face value represented by a household's marginal tax rate.[1] Although a small tuition tax credit might be constructed to have roughly the same effect on price as a much larger tax deduction, the different types of subsidies would likely have different utilization rates and patterns.

A reimbursable tax credit would be accessible to far more parents than a tax deduction, since it would be available to all parents who file tax forms, not just those who itemize deductions. For these reasons, a tax credit could be expected to have higher utilization rates and greater costs than a deduction of the same imputed value to parents. Whether it would have greater influence on parents' schooling choices is debatable. Parents would still have to incur the immediate costs of private schooling before they could benefit from a tax credit, and unless the tax credit were substantial, it is unlikely that many parents would make school decisions primarily on this basis.

An educational voucher might have greater effects on parents' schooling choices, since it would represent "up-front" cash to be applied against parents' costs. Such an instrument would also, presumably, be available to all parents, including those who do not pay taxes. In this sense, a voucher theoretically offers the widest access to choice (and the greatest potential costs). However, the size of the vouchers and the administrative mechanisms used to allocate them would influence both their use and distributional effects.

As we learned in Minnesota, a tax deduction is perhaps the most regressive and inefficient form of subsidy for parents' educational expenses if the goal is to expand choice-making ability. While

[1]It is also worth noting that a federal tax deduction would cost more per user than a state deduction of the same size, since marginal tax rates for the upper-income households likely to use a tax deduction are higher in the federal tax system than in state tax systems.

increasingly costly,[2] the deduction benefits primarily upper-income households and parents who would have made the same schooling choices in the absence of the deduction. For those parents at the margin, policies that directly increase access to schooling alternatives (through lower immediate costs and increased convenience) are more likely to affect actual schooling choices than is an indirect tax subsidy.

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[2]The deduction cost the state over $6 million in 1983, more than double its cost in 1978.

Appendix

SELECTION AND DISPOSITION OF SURVEY SAMPLES

1984 MINNESOTA PARENT SURVEY SAMPLE

The household survey was administered over the telephone to randomly selected eligible households residing within a seven-county area in the state of Minnesota. The original sampling design called for selection of the sample by the Waksberg method of random-digit dialing, in which telephone numbers are generated completely at random by a computer from a preselected list of area codes and telephone exchanges serving the sampling area. In order to ensure a sufficient sample of nonpublic school parents, the random-digit dialing procedure was used outside of Minneapolis and was supplemented with a choice-based sample of equal numbers of randomly selected private and public school parents from the Minneapolis school district. The final combined sample consisted of 476 respondents, of whom 339 were parents of public school children and 137 were parents of private school children.

Sampling Area

Minnesota is divided into nine regional units, for educational planning purposes. These regions are called Educational Cooperative Service Units (ECSUs). The Metropolitan ECSU, also referred to as Region 11, encompasses a seven-county area, consisting of Anoka, Dakota, Hennepin, Ramsey, and Washington counties (together forming the Minneapolis-St.Paul Standard Metropolitan Statistical Area), as well as Carver and Scott counties. The Metropolitan ECSU comprises urban, suburban, and rural communities with a population demographically representative of the state as a whole. It contains 48 school districts which together account for 48 percent of total K-12 enrollment in the state. The survey population is defined as households with school-aged children (children enrolled in grades K-12) residing in the Metropolitan ECSU.

The decision to limit the survey to a specific region as opposed to the entire state was based on several considerations, primarily minimizing survey costs and maximizing the potential number of nonpublic school parents in the population.

A major component of survey costs is the screening process. The interviewer must determine the eligibility of the contacted respondent whose telephone number is randomly generated and selected by the computer. A higher proportion of eligible households (those with school-aged children) in the total universe helps to reduce the number of ineligible contacts. While the overall proportion of households with children (approximately 36 to 37 percent) is the same in Region 11 as in the entire state of Minnesota, these households appear to be clustered in certain areas of the region. This clustering increases the successful contact rate by reducing the number of unproductive contacts (i.e., nonhouseholds or households without school-aged children) required to yield one eligible respondent.

Furthermore, the proportion of households with children in nonpublic schools is higher in Region 11 than elsewhere in the state. For example, in 1980, only 7.6 percent of all persons 3 years old and over enrolled in school were enrolled in private schools in grades K-12, whereas in Region 11, the proportion was 9.0 percent (Bureau of the Census, 1980). The region has an extremely high concentration of both religiously affiliated (Catholic, Lutheran, Baptist, Seventh Day Adventist, Reformed, etc.) and nonsectarian private schools. Forty-two percent of the state's nonpublic schools are located in this region, accounting for 58 percent of all nonpublic school K-12 enrollment in the state. Of the seven counties comprising the Metropolitan ECSU, five have at least 10 percent of their K-12 students attending nonpublic schools, and two of those have at least 18 percent of their K-12 students attending nonpublic schools (Minnesota Department of Education, 1980–81). This concentration increased the probability of sampling nonpublic school parent households, who were an integral and necessary part of the survey.

Limiting the survey population to the Metropolitan ECSU raised two questions: (1) How different or how similar is Region 11 to the state in terms of demographic and economic variables? and (2) How heterogeneous are the various counties making up Region 11? Table A.1 presents detailed demographic and economic data on Region 11 and the entire state. The two sets of data are surprisingly similar. The differences arise primarily from the fact that the state has a much higher rural population, so that a correspondingly higher proportion of the labor force is employed in agriculture, forestry, and related industries.

Table A.2 presents data on several socioeconomic dimensions of the counties that provide insights into decisionmaking by subgroups that appear not to be well-represented in the overall survey population. The counties are indeed quite heterogeneous: Carver and Scott

Table A.1

COMPARISON OF REGION 11 WITH STATE OF MINNESOTA, BY DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS, 1980

Variable	Region 11	State
Total population	1,985,873	4,075,970
I. Percent of total population		
Urban/rural	100.00	100.00
Living in urban areas	94.79	66.86
Living in rural areas	5.21	33.14
Race		
White	94.73	96.56
Nonwhite	5.27	3.44
Age		
Under 5 years	7.17	7.54
5–17 years	20.83	21.21
18–64 years	62.52	59.48
65 years and older	9.48	11.77
Household type		
In family household	83.36	84.69
In nonfamily household	14.28	12.41
In group quarters	2.36	2.90
II. Households, by type and presence of children		
Married couple family	58.65	62.79
with own children	32.06	33.95
Male householder family, no wife present	2.15	2.18
with own children	0.87	0.78
Female householder family, no husband present	8.67	7.24
with own children	5.58	4.51
Nonfamily household	30.63	27.94
Households, by 1979 income		
Less than $2,500	2.55	3.70
$2,500–4,999	6.34	8.19
$5,000–7,499	6.16	7.78
$7,500–9,999	6.13	7.37
$10,000–12,499	6.99	7.87
$12,500–14,999	6.16	6.93
$15,000–17,499	6.84	7.45
$17,500–19,999	6.43	6.81
$20,000–22,499	7.40	7.38
$22,500–24,999	6.38	6.00
$25,000–27,499	6.54	5.80
$27,500–29,999	5.16	4.38
$30,000–34,999	8.85	7.08
$35,000–39,999	5.78	4.37
$40,000–49,999	6.08	4.45
$50,000–74,999	4.34	3.12
$75,000 or more	1.87	1.32
Average 1979 income ($)	23,837	20,726

Table A.1 (cont.)

Variable	Region 11	State
III. Employed persons 16 and over, by industry		
Agriculture, forestry, fisheries, and mining	1.00	6.68
Construction	4.72	5.27
Manufacturing		
Nondurable goods	6.96	6.98
Durable goods	15.98	13.21
Transportation	5.29	4.63
Communications and other public utilities	2.17	2.22
Wholesale and retail trade	22.51	21.92
Finance, insurance, and real estate	7.50	5.71
Business, repair services	4.93	3.84
Personal, entertainment, and recreation services	3.69	3.67
Professional and related services	21.35	22.18
Public administration	3.94	3.69
Employed persons 16 and over, by occupation		
Managerial and professional	26.08	23.04
Technical, sales, administrative, support	34.75	30.10
Service	12.98	14.04
Farming, forestry, fishing	0.90	5.67
Precision, production, craft, and repair	10.31	11.29
Operators, fabricators, laborers	14.98	15.80
IV. Persons 3 years and over, by school enrollment	100.00	100.00
Public school		
Nursery school	1.52	1.60
Grades K–8	41.08	43.69
Grades 9–12	22.37	24.60
College	17.95	16.00
Private school		
Nursery school	3.33	2.40
Grades K–8	6.72	5.90
Grades 9–12	2.29	1.68
College	4.75	4.14
Persons 18 years and over, by years of school completed		
0–11	18.91	25.03
12	40.00	40.23
13–15	21.20	19.37
16	11.60	9.11
17+	8.22	6.18
Unknown	0.07	0.08

Table A.2

COMPARISON OF COUNTIES COMPRISING ESCU REGION 11

Variable	Anoka	Carver	Dakota	Hennepin	Ramsey	Scott	Washington
Total population	195,998	37,046	194,279	941,411	459,784	43,784	113,571
Number of households	60,716	12,011	64,087	365,536	170,505	13,501	35,088
Number of families	50,213	8,544	49,782	234,909	113,962	11,033	28,959
% of total population living in							
Urban area	91.7	46.8	92.2	99.0	99.7	65.0	76.7
Rural area	8.3	53.2	7.8	1.0	0.3	35.0	23.3
Households, by type and presence of children							
Married couple family							
% with own children	48.7	42.5	43.9	26.5	28.1	46.3	48.2
% without own children	24.8	28.5	24.7	27.0	27.2	25.6	25.3
Male householder, no wife present							
% with own children	1.1	1.2	0.8	0.8	0.8	0.9	1.0
% without own children	1.0	1.4	1.0	1.4	1.3	1.2	1.2
Female householder, no husband present							
% with own children	5.7	3.8	5.4	5.5	6.0	4.1	5.1
% without own children	2.1	2.2	2.2	3.3	3.7	1.9	2.0
Non-family household (%)	16.6	20.4	22.0	35.5	32.9	18.0	17.2
All families with own children (%)	55.5	47.5	50.1	32.8	34.9	53.3	54.3
Households with persons under 18, by type							
Married couple family (%)	85.8	88.2	85.9	78.5	78.1	89.2	88.0
Other family							
Female householder (%)	11.2	8.8	11.6	17.8	18.3	8.2	9.3
Male householder (%)	2.3	2.4	1.9	2.7	2.8	2.0	2.1
Non-family households (%)	0.7	0.6	0.6	1.0	0.8	0.6	0.6

Table A.2 (cont.)

Variable	Anoka	Carver	Dakota	Hennepin	Ramsey	Scott	Washington
Persons under 18 (% total population)	35.5	32.3	33.9	24.8	26.2	35.4	34.8
% of persons under 18 aged 0–5	25.0	26.8	25.4	25.6	26.6	24.7	24.1
% of persons under 18 aged 5–17	75.0	73.2	74.6	74.4	73.4	75.3	75.9
Related children under 18 (% total population)	35.0	31.8	33.6	24.3	25.6	35.0	34.4
% related children under 18 aged 0–5	25.1	27.0	25.5	25.8	26.7	24.7	24.2
% related children under 18 aged 5–17	74.9	73.0	74.5	74.2	73.3	75.3	75.8
Persons 3 years and over, by school enrollment (% total population)	31.5	29.0	30.9	27.1	28.8	31.0	32.1
Persons 3 years and over in							
Public schools	91.7	72.2	87.1	84.8	72.6	84.4	88.4
Nursery school	1.6	1.5	1.7	1.4	1.6	1.3	1.5
Grades K–8	53.8	38.7	49.4	38.5	33.4	46.5	50.7
Grades 9–12	25.2	25.1	24.7	21.5	19.8	29.4	25.8
College	11.1	6.9	11.3	23.4	17.8	7.2	10.4
Private schools	8.3	27.8	12.9	15.2	27.4	15.6	11.6
Nursery school	2.7	4.4	3.8	3.5	3.1	2.8	3.3
Grades K–8	3.7	14.3	5.6	5.6	10.0	11.4	5.0
Grades 9–12	0.8	2.9	1.6	2.0	4.3	0.5	1.1
College	1.1	6.2	1.9	4.1	10.0	0.9	2.2
Persons 3 years and over, grades K–12							
% in public schools	94.6	78.7	91.0	88.7	78.8	86.5	92.6
% in private schools	5.4	21.3	9.0	11.3	21.2	13.5	7.4

counties are heavily rural; the proportion of households with children varies widely across the counties; and the proportion of total school enrollment in private schools ranges from a low of 5.4 percent to a high of 21.3 percent.

Sampling Methods

The household sample for the parent survey was selected using two methods: a random-digit dialing (RDD) procedure and a choice-based sampling procedure. These are described below.

The Random-Digit Dialing Sample. The major portion of the sample was selected using the Waksberg method of random-digit dialing. Frankel (1980), of the Bureau of Social Science Research, provides a good, succinct description of the method:

> Random-digit-dialing involves the use of a sample of telephone numbers generated completely at random by a computer. It thus differs from other methods in which the sample is drawn from phone directories. The first step in creating a random-digit-dialing sample is to determine which area codes and telephone exchanges serve the geographic area of interest in the survey. The computer then affixes to these area codes and exchanges unique four-digit combinations of phone numbers. The resulting numbers constitute the sample.
>
> The principal advantage of using this type of sample is that it is completely random and, therefore, free of bias. In other words, it gives everyone who lives in a household with access to a phone a chance of being chosen. It enables us to reach people whose telephone numbers are not listed as well as those who do have listed numbers since we are not relying on directory information, which is incomplete and always out-of-date in varying degrees.
>
> There are also disadvantages to using random-digit-dialing. First of all, we do miss those people who do not have telephones, but there are fewer and fewer of them as time passes. The more salient disadvantage is that the process requires that all *possible* numbers be generated—not just those that are known to be working, residential, and so on. Consequently many of the numbers that are assigned are unusable and it takes considerable time, effort, and therefore, money to arrive at this determination.
>
> To deal with this concern, Joseph Waksberg, Vice President of Westat, Inc., developed a variant of random-digit-dialing, which reduces the number of non-productive calls which would otherwise be made, e.g., to unassigned numbers, or to business establishments, when only residences are desired. The Waksberg procedure is based on the knowledge that subscribers are generally assigned phone numbers used mostly (if not exclusively) by businesses. Furthermore, unassigned (vacant, nonworking) telephone numbers are also likely to

> exist within largely unused *groups* rather than being distributed among many partially used groups.
>
> Thus, as described in detail below, the Waksberg procedure involves generating numbers in clusters (called primary sampling units or PSUs), with numbers in each PSU having the same first eight digits (i.e., the area code, exchange and the next two digits) and a randomly affixed pair of final digits. A call is then attempted at the first phone number within the PSU. If a residential number is reached (assuming that the survey involves residences), that PSU is retained in the sample, and a set number of additional interviews are attempted within it. If, on the other hand, the first number is non-residential, non-working, etc., the entire PSU is rejected under the theory that most of the other numbers in it will also be non-residential, non-working, etc.
>
> PSUs are selected at random until a set number of eligible phone numbers has been reached. The resulting sample is a probability cluster sample, with all clusters equal in size (i.e., having the same number of eligible phone numbers).

To avoid biasing the sample heavily toward the Minneapolis area, from which our choice-based sample was selected, we obtained from AT&T a tape consisting of all the exchanges in our seven-county area that were outside Minneapolis. We modified Waksberg's method as described below.

Waksberg's procedure provides a cluster sample within PSUs, each consisting of 100 phone numbers that share a common first eight digits including area code, e.g., 213–393–04. In Stage I of the algorithm, we selected PSUs at random and screened each one by calling a single number within the PSU. The PSU passed Stage I if and only if the selected number was identified as a *residence outside Minneapolis (ROM)*. If the PSU passed, it was used in Stage II; otherwise, it was discarded from future consideration.

In Stage II, we called randomly selected numbers within the PSU until we reached $k + 1$ phone numbers that would have passed the Stage I screen, i.e., the screening number plus k additional ROMs. We tried to complete interviews at each of these ROMs. The actual number of completed interviews in a particular PSU varied, depending on the proportion of households without children and break-offs/refusals. The key to Waksberg's algorithm is holding constant the number of ROMs rather than the number of completed interviews in each PSU.

In calculating the number of PSUs required, we used the following assumptions. We wanted approximately 600 interviews outside of Minneapolis and were satisfied to take whatever ratio of public versus

private school children we ended up with. The average unproductive call (to a business or residence without any school children) would take about 10 minutes, compared to about 30 minutes for a complete interview. Thus, the ratio of these two items, R, is about 3.0.

About 40 percent of all potential PSUs have no residential phone numbers. Furthermore, about 25 percent of the rest would fall completely within Minneapolis. Thus, 55 percent of the PSUs would have no ROMs (t = 0.55 in Waksberg's notation). About 20 percent of all numbers are residential, so 15 percent are ROMs (π = 0.15 in Waksberg's notation). We assumed that one-third of households will yield interviews (p = 1/3 in our notation). The intraclass correlation coefficient within PSUs might be anything. A value of p = 0.03 was assumed.

An exchange is the first six digits of the number, e.g., 213-393. We had a list of approximately 228 exchanges in the seven-county area (the exact number is not relevant). Furthermore, we knew which blocks of 1,000 numbers (e.g., 213-393-0) included only coin phones.

Because we had a second screening stage—looking for households with children—we could not use Waksberg's formula (5.5) for the optimum (k + 1). However, the formula we used was very similar:

$$(k + 1)^2 = \frac{t}{[p\pi R + (1 - p\pi - t)]} \frac{(1 - pp)}{pp} .$$

The only change was that π and p are both multiplied by p = 1/3. The result is $(k + 1) \simeq 10$. This number is most sensitive to t and to p. If p = 0.01, the optimum $(k + 1)$ jumps to 17; however, if it is really 0.06, the best $(k + 1)$ drops to 7.

We decided to keep calling until we reached 10 ROMs per cluster. Based on the above assumptions—10 ROMs per PSU and one completed interview for every three ROMs—we would average 3.3 completed interviews per PSU. To collect 600 interviews, we needed about 180 PSUs that had passed the Stage I screen. Assuming π = 0.15, we would need 180/0.15 = 1,200 PSUs for Stage I.

The algorithm described below does not depend on the value of $(k + 1)$ or any other parameter that might be changed. It was developed to yield a sufficient number of PSUs to satisfy any circumstances:

1. For each of the 228 exchanges, we generated 10 records. Each record included a variable EXCHANGE, a six-digit number or string.
2. A variable DIGIT7 was created which is 0 for the first record in an exchange, 1 for the second, . . . , and 9 for the tenth.

3. A variable DIGIT8 was created, which is a random digit from 0 to 9 independent of the other values in the exchange.
4. Then, PSU = EXCHANGE | DIGIT7 | DIGIT8.
5. PSUs that included only coin phones were flagged for later deletion.
6. A uniform random number was assigned to each record. The random numbers were ranked within each exchange. Each record received an integer between 1 and 10 (or 0 and 9).
7. The records were sorted across the whole file by the ranks.
8. The records were randomly permuted within levels of the ranks.
9. The PSUs that were flagged as consisting of only coin phones were deleted (this step may be done any time after completing step 6).

Except for the PSUs deleted in step 9, the final result was a list of 2,280 PSUs, ten from each exchange. Furthermore, each exchange appeared exactly once in each subblock of 228 PSUs. Stage I screening started at the top of this list of PSUs and continued sequentially until enough PSUs had been sampled.

In the final step of the algorithm:

10. For each of the 2,280 selected PSUs, the 100 possible final two digits that fill out the phone number were randomly permuted to create a final list of 100 numbers.

After screening the original 2,280 PSUs for exchanges appearing more than four times in the list sample, which indicates that they are inside the city of Minneapolis, we began the calling with 1,757 PSUs. Approximately halfway through the process, we changed the screening criterion from residences outside the city of Minneapolis to residences outside the city of Minneapolis with children who were in grades K-12 in the previous year. We did this to decrease the number of unproductive PSUs in the sample. In so doing, we also changed the number of eligible cases required to complete any given PSU from 10 to 3.

We completed the screening process on 1,412 PSUs. Of those, 167 (10.8 percent) passed the initial screening, and 1,245 failed. (We began the screening process on an additional 120 PSUs, but these were not completed when the field period ended. The remaining PSUs were not attempted.) The numbers of PSUs that failed the screen are as follows:

Disconnected numbers. . . . 662
Nonresidence 311
No children 259
Inside Minneapolis 13

We completed 292 interviews from the 167 PSUs that passed the screen. Table A.3 shows the final disposition of this sample.

It is not easy to determine what one should calculate as a response rate for this sample. It can be done by dividing the number of completed interviews by the number of known eligible respondents. If the conservative assumption is made that all the refusal/breakoffs are eligible respondents, the response rate is 69.7 percent (292/419). However, because of the number of screening questions required to determine eligibility, we cannot be sure that more than 30 respondents were really eligible. Using this as the bound of the most liberal estimate, we would report a maximum response rate of 90.7 percent (292/332).

Choice-Based Sample. This procedure samples the population conditional on the choices it has made. We obtained a randomly selected list of 397 public and private school children residing in the Minneapolis school district, categorized by type of school attended by the child. Of these, 209 were enrolled in public schools and 186 in private schools. Table A.4 shows the disposition of the final sample. The simple response rate for this sample (completed interviews divided by refusal/breakoffs plus completed interviews) is 72 percent. It is likely that in those cases for which "No children" is given as an outcome, phone numbers had been changed from those on the list or were incorrect on the list. "Non-residence" could reflect cases where parents had given their work numbers to the schools.

Table A.3

FINAL DISPOSITION OF THE RDD SAMPLE

Completes	292
Refusals/breakoffs	125
Nonworking numbers	282
Language barrier	8
Not eligible (nonresidence, no children, maximum calls)	105
Total number	1812

Table A.4

FINAL DISPOSITION OF THE CHOICE-BASED SAMPLE

Completes	184
Refusals/breakoffs	69
Nonworking numbers	42
Language barrier	6
Not eligible (nonresidence, no children, maximum calls)	95
Total number	396

1984 MINNESOTA NONPUBLIC SCHOOL SURVEY

The decision to limit the parent survey to households in Region 11 required placing comparable limits on the nonpublic school survey population as well. This allowed us to use the data to supplement the household survey database. In limiting the survey population to the Metropolitan ECSU, two questions must be addressed: How different or how similar is Region 11 to the state in terms of number and type of nonpublic schools? and (2) How different or how similar is Region 11 to the state in terms of the diversity of schools? Table A.5 compares nonpublic schools in Region 11 to nonpublic schools statewide by number, size (defined as enrollment in grades K-12), and type (elementary/secondary). The table shows that Region 11 includes proportionate numbers of different types of schools but has a larger proportion of "large" schools (enrollment of 300 and over) than the state as a whole.

Data on the distribution of nonpublic schools throughout the state by religious affiliation are presented in Table A.6. Data on Region 11 from 1979–80 suggest that all types of nonpublic schools are well-represented in Region 11: Almost 50 percent of all Catholic schools, 34 percent of all Lutheran schools, 38 percent of Seventh Day Adventist and Baptist schools, and 66 percent of all independent schools (Minnesota Department of Education, *Affiliation, Location, and Size of Nonpublic Schools, 1979–80*, Education Statistics Section, October 1981).

Approximately 42 percent of the nonpublic schools in the seven-county sampling area are small (having enrollments of 1–100 students). A simple random sample would have resulted in an overly large sample of small schools and statistically small samples of medium-to-large

Table A.5

NONPUBLIC SCHOOLS IN REGION 11 AND THE STATE OF MINNESOTA

(Number of schools)

Variable	Region 11	State
Number of nonpublic schools	266	553
Type of school[a]		
Elementary only	52	146
Secondary only	22	43
Elementary and secondary	161	355
Enrollment of school[b]		
1–100	112	242
101–200	48	143
201–300	47	80
301–400	17	24
401–500	19	31
500 and over	23	24
Percent of schools with enrollment of		
1–100	42	45
101–200	18	26
201–300	18	15
301 and over	22	14

SOURCE: Minnesota Department of Education, *Information on Minnesota's Nonpublic Schools for 1980-81*, Education Statistics Section, March 1982; and Minnesota Department of Education, *Minnesota Nonpublic Schools by County/District, 1981-82*, Education Statistics Section, February 1983.

[a]Number of reporting schools only; will not total number of nonpublic schools.

[b]Region 11 school enrollments calculated from 1981-82 data.

schools. We therefore stratified the schools by size (enrollments of 1–100, 101–200, 201–300, 300 and over). Sampling fractions were selected to produce a total final sample of approximately 110 schools and approximately equal numbers of schools in each strata. A simple random-number generator was used to select the actual schools comprising the final sample. Table A.7 presents the sampling universe stratified by size and the selected sample.

From the 108 schools in the final sample, we obtained 98 completed interviews. Six of the remaining 10 administrators refused interviews, and 4 could not be reached during the field period. Our simple response rate for this survey was therefore 90.7 percent.

Table A.6

MINNESOTA NONPUBLIC SCHOOLS, BY AFFILIATION, 1980-81

Affiliation	Number of Schools	Percent of Total
Catholic	252	45.6
Lutheran	118	21.3
Baptist	35	6.3
Seventh Day Adventist	19	3.4
Reformed	7	1.3
Amish	4	0.7
Assembly of God	3	0.6
Christian and Missionary Alliance	3	0.6
Nondenominational, interdenominational	17	3.1
Other religious affiliations	26	4.7
Nonsectarian	61	11.0
Unknown	8	1.4
Total	553	1.4

SOURCE: Minnesota Department of Education (1982).

Table A.7

SELECTION OF SAMPLE FOR NONPUBLIC SCHOOL SURVEY

Enrollment in FY83	Total	Number Selected	Percent of Total
1-100	112	26	23.0
101-200	48	28	58.0
201-300	47	28	60.0
Over 300	59	26	44.0
Total	266	108	48.0

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